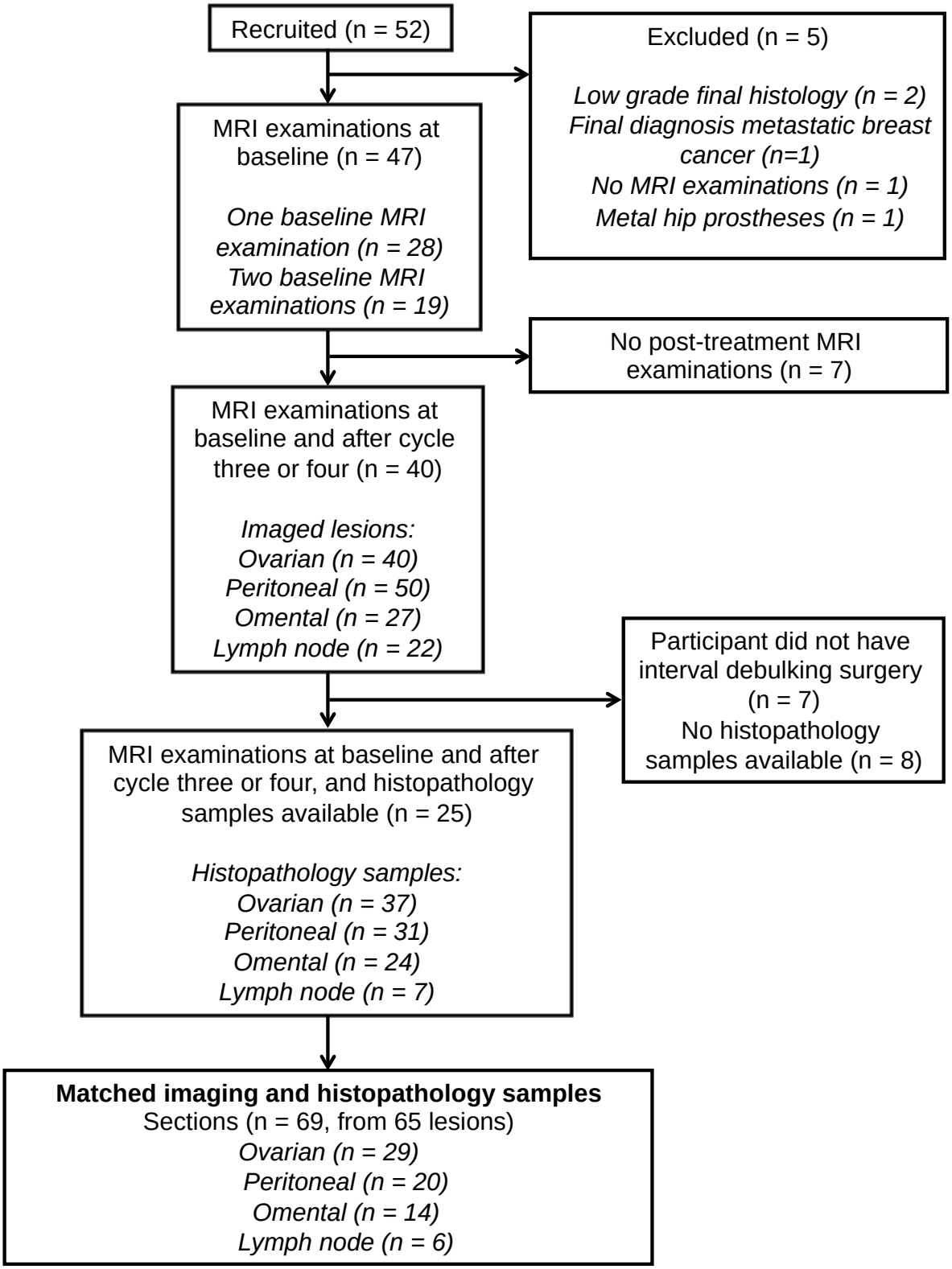
Supplementary Figure 1



Supplementary Figure 1: Flowchart showing participant and lesion numbers available for analysis. Participants were enrolled at four hospitals, with imaging data available from all four hospitals, and imaging and correlated pathology data available from three of four hospitals. For the 40 participants with MRI examinations at baseline and after cycle three or four: the median interval between baseline MRI and starting chemotherapy was 5 days (range 0 to 14 days) (date of first baseline taken in patients with two baseline examinations). Platinum-based chemotherapy was administered on day one of a 21-day cycle in all participants, with a median interval between day one of the third or fourth cycle and the post-treatment MRI was 20 days (range 15 to 39 days).

Supplementary Table 1: MRI protocols from four centres.

	Site 1	Site 2	Site 3	Site 4
Manufacturer	Siemens Healthcare, Erlangen, Germany	GE Healthcare, Waukesha, WI, USA	GE Healthcare, Waukesha, WI, USA	Siemens Healthcare, Erlangen, Germany
Model	MAGNETOM Avanto	Discovery MR450	Optima MR450w	MAGNETOM Avanto Fit
Field strength/T	1.5	1.5	1.5	1.5
Maximum gradient amplitude/mT m^{-1}	45	50	34	45
Maximum slew rate/T m^{-1} s^{-1}	200	200	150	200
Receive coil (s)	2 × anterior body matrix and posterior spine matrix	body array	body array	2 × anterior body matrix and posterior spine matrix
Participant position	Feet first supine	Feet first supine	Feet first supine	Head first supine
Slice orientation	Axial	Axial	Axial	Axial
Slice thickness/mm	6	6	6	6
Slices per station	26	26	26	26
Number of stations	3	3	3	3
PE direction	AP	AP	AP	AP
Diffusion-weighted MRI				
Sequence	Single-shot EPI	Single-shot EPI	Single-shot EPI	Single-shot EPI
FOV (read)/mm	380	380	380	380
FOV (phase)/mm	332	334	334	332
Acquired matrix (read)	128	128	128	128
Reconstructed matrix (read)	256	256	256	256
Acquired pixel size/mm x mm	3.0 × 3.0	3.0 × 3.0	3.0 × 3.0	3.0 × 3.0
Reconstructed pixel size/mm x mm	1.5 × 1.5	1.5 × 1.5	1.5 × 1.5	1.5 × 1.5
Echo time (TE)/ms	75	81	75	76
Repetition time (TR)/ms	8000	8000	8000	8000
Receive bandwidth	1776 Hz/pixel	Receiver bandwidth ± 125 kHz (pixel bandwidth 1953 Hz/pixel)	Receiver bandwidth ± 125 kHz (pixel bandwidth 1953 Hz/pixel)	1562 Hz/pixel
Number of signal averages (NSA)	4	4	4	4
Parallel imaging	GRAPPA, reduction factor 2; 36 ACS lines	ASSET, reduction factor 2	ASSET, reduction factor 2	GRAPPA, reduction factor 2; 36 ACS lines
Partial Fourier	no	yes	yes	no
Fat suppression	SPAIR	Water-selective excitation	Water-selective excitation	SPAIR
Diffusion gradient scheme	bipolar	DSE	monopolar	bipolar
Number of diffusion directions	3	3	3	3
Diffusion encoding scheme	3-scan trace	ALL	ALL	3-scan trace
Diffusion-weighted MRI series used for analysis	Trace	Trace	Trace	Trace
Acquired b-values/s mm^{-2}	0, 100, 500, 900	0, 100, 500, 900	0, 100, 500, 900	0, 100, 500, 900
Breathing instructions	Free breathing	Free breathing	Free breathing	Free breathing

Navigator/gating	none	none	none	none
Acquisition time per station	5 mins 44 s	5 mins 28 s	5 mins 28 s	5 mins 46 s
T_1-weighted MRI				
Sequence	2D gradient echo (FLASH)	2D gradient echo (FSPGR)	2D gradient echo (FSPGR)	2D gradient echo (FLASH)
FOV (read)/mm	380	380	380	380
FOV (phase)/mm	332	334	334	332
Acquired matrix (read)	256	256	256	256
Acquired pixel size/mm x mm	1.5 × 1.5	1.5 × 1.5	1.5 × 1.5	1.5 × 1.5
Echo time (TE)/ms	4.82	4.2	4.2	4.82
Repetition time (TR)/ms	139	139	139	139
Fat suppression	None	None	None	None
Flip angle/°	70	70	70	70
Breathing instructions	2 breath-holds	2 breath-holds	2 breath-holds	2 breath-holds
Acquisition time per station	35 s (17.5 s per breath-hold)	34 s (17 s per breath-hold)	44 s (22 s per breath-hold)	35 s (17.5 s per breath-hold)
T_2-weighted MRI				
Sequence	Single-shot turbo spin echo (HASTE)	Single-shot turbo spin echo (SSFSE)	Single-shot turbo spin echo (SSFSE)	Single-shot turbo spin echo (HASTE)
FOV (read)/mm	380	380	380	380
FOV (phase)/mm	332	380	334	332
Acquired matrix (read)	256	256	256	256
Acquired pixel size/mm x mm	1.5 × 1.5	1.5 × 1.5	1.5 × 1.5	1.5 × 1.5
Echo time (TE)/ms	90	90	92	92
Repetition time (TR)/ms	1500	1500	1500	1500
Fat suppression	None	None	None	None
Breathing instructions	2 breath-holds	2 breath-holds	2 breath-holds	2 breath-holds
Acquisition time per station	39 s (19.5 s per breath-hold)	38 s (19 s per breath-hold)	38 s (19 s per breath-hold)	39 s (19.5 s per breath-hold)

EPI = echo planar imaging, FOV = field of view, PE = phase encoding, AP = anterior-posterior, TE = echo time, TR = repetition time, NSA = number of signal averages, GRAPPA = generalized autocalibrating partially parallel acquisition, ASSET = array spatial sensitivity encoding technique, SPAIR = spectral adiabatic inversion recovery, DSE = double spin-echo, FLASH = fast low-angle shot, FSPGR = fast spoiled gradient echo, HASTE = half-Fourier single-shot turbo spin echo, SSFSE = single-shot fast spin echo.

Supplementary Table 2: Study participant demographics, clinical characteristics, and chemotherapy schedules.

Variable	
Number of participants	47
Sex n women (%)	47 women (100%)
Age / years median (IQR)	61 (57-70)
Histological subtype n (%)	serous 47 (100%)
Current chemotherapy regimen	
Carboplatin monotherapy n (%)	3 (6%) *weekly 0 (0%)* *3-weekly 3 (100%)*
Carboplatin and paclitaxel n (%)	44 (94%) *weekly carboplatin 1 (2%)*‡ *3-weekly carboplatin 43 (98%)* *weekly paclitaxel 9 (20%)* *3-weekly paclitaxel 35 (80%)*
Also receiving bevacizumab # n (%)	5 (11%)

‡ participant in ICON8 study;

bevacizumab given during neoadjuvant chemotherapy.

IQR = interquartile range.

Supplementary Table 3: Site-specific repeatability of solid tumour volume and ADC_{median} in epithelial ovarian cancer.

Tumour site	n	95 % LoA for Volume [95 % CI] / cm^3	95% LoA for ADC_{median} [95 % CI] / 10^{-5} mm^2 s^{-1}
Ovary	20	-19.2 [-26.8, -11.5] to 17.9 [10.3, 25.5]	-10 [-14, -6] to 9 [5, 13]
Peritoneum	52	-5.7 [-7.1, -4.4] to 5.4 [4.0, 6.8]	-13 [-17, -10] to 16 [12, 19]
Omentum	23	-43.2 [-59.5, -26.9] to 42.3 [26.0, 58.6]	-17 [-24, -11] to 17 [11, 24]
Lymph node	28	-3.2 [-4.1, -2.3] to 2.2 [1.3, 3.2]	-27 [-35, -19] to 21 [13, 29]

n = number of lesions,

ADC = apparent diffusion coefficient (where ADC_{median} is defined as the median ADC of all fitted voxels in a lesion),

LoA = limits of agreement,

CI = confidence interval.