Generic dynamic protocol

1.5 Tesla 3D spoiled gradient echo Body XMT Phased array RCV Quiet breathing No parallel imaging No magnetization preparation **Oblique** coronal Frequency encode S/I TE as short as possible (1-3 ms) TR as short as possible (5-7 ms) Temporal resolution ≤ 10 sec SNR/DR trade-off flip angle (30 degree) \pm 31.25 kHz receiver bandwidth (i.e., 250 Hz/pixel) Region appropriate FOV (pilot 40 cm for body) 80% FOV for acquisition (may need to adjust arm position to avoid wrap-around) Partial Fourier as needed As many slices per acquisition as possible (~12 prior to zero fill) 5-8 mm slice thickness 256 X 160 acquisition matrix (i.e., 1.56 mm \times 2.00 mm pixel size) Zero fill in slice direction (ZIP2) [For phantom, also zero fill in plane (ZIP512)] Acquire data for 10 minutes, inject at 1 minute

Generic ratio protocol

These images will be acquired prior to contrast injection All parameters the same as for dynamic protocol except:

> 15 degree flip angle 8 NEX (averages) Repeat second time with body RCV

Generic T1 protocol

These images will be acquired prior to contrast injection All parameters the same as for dynamic protocol except:

> 3, 6, 9, 15, 24, 35 degree flip angles (may need to be adjusted – look-up table dependent on TR and scanner) 4 NEX