



Figure S1. Axial abdominal images from a volunteer acquired on a 3.0T scanner. (a) Raw LEENA image with $N/2$ -ghost of the adipose tissue. (b) Conventional fat-suppressed image using spectral excitation. (c&d) Unghosted and off-resonance corrected LEENA-S water and fat images. (e&f) Unghosted and off-resonance corrected LEENA-G water and fat images. (g&h) Off-resonance corrected 2PD images as a reference. Arrows indicate regions of erroneous water-fat assignment due to increased field inhomogeneities near the edges of the field of view.