



**Supplementary Figure 1.** (A) Box plots of the distributions of Cho and NAA concentrations in Normal Appearing Brain tissue (NAT). The bottom and top of the box are first  $Q_1$  (25%) and third  $Q_3$  (75%) quartiles and the band inside denotes the median. The vertical bars in the plots, extending to distances of  $1.5 \cdot (Q_3 - Q_1)$  above  $Q_3$  and below  $Q_1$  indicate thresholds (or inner fences), above or below which values are considered to be outliers.  $MTV_{Cho}$  consists of pixels with Cho concentrations above the upper fence in the Cho graph (high Cho) and the pixels in  $MTV_{NAA}$  are below the fence on the NAA graph (low NAA). The proportion of outliers was less than 7% for Cho (range: 0% (T11 and T15) to 6.75% (T4)) and no more than approximately 4% for  $MTV_{NAA}$  (range: 0% (T14 and T15) to 4.09% (T12)).