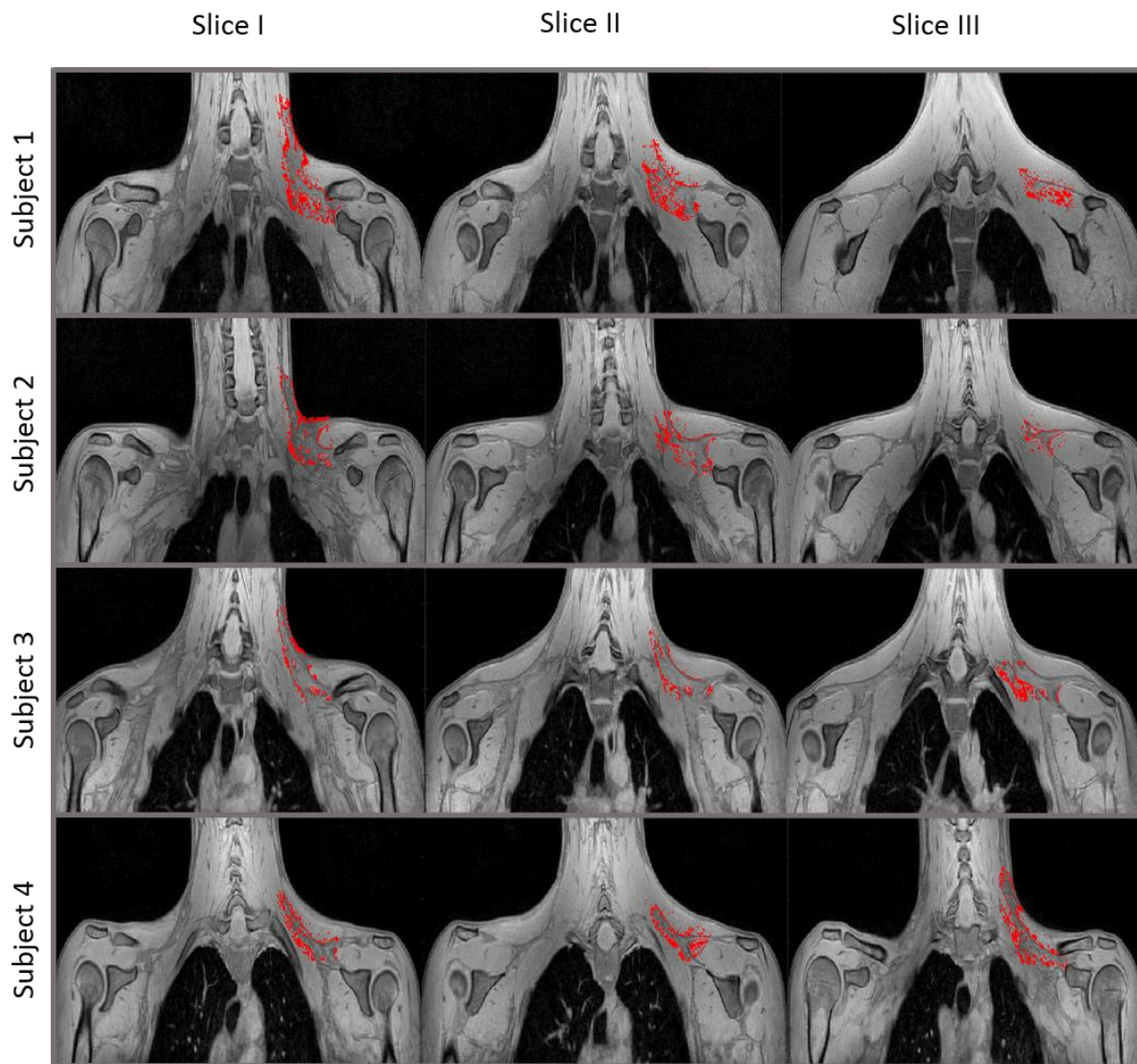


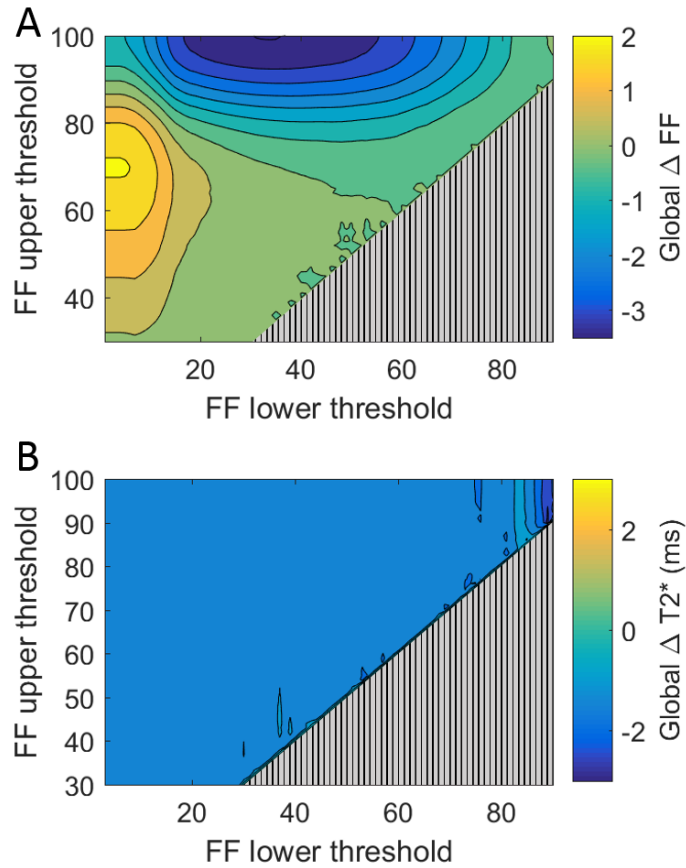
Supplemental Figure S1. Deltoid SAT ROI delineation and SAT FF (FFSAT) analysis

The SAT ROI in the thermoneutral scan (top) and post-cooling scan (bottom) (**A**). Lipid content in the SAT region is color-mapped over a 30–100% FF range. SAT FF before and after cooling (**B**). Data are represented as mean \pm SEM for n=8. Data analysis was performed using the paired t-test.



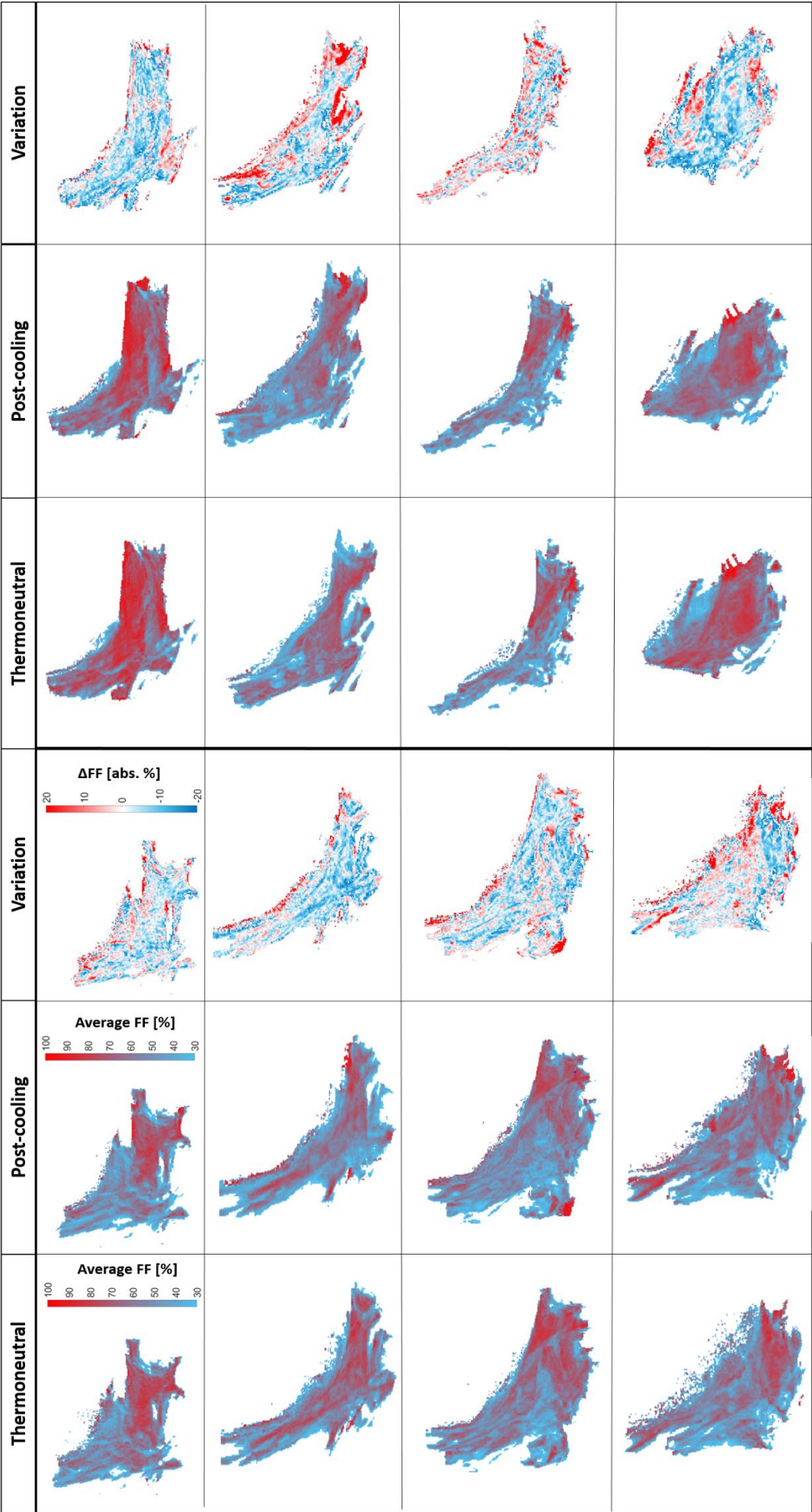
Supplemental Figure S2. Localization of low FF voxels (10–30%) in the supraclavicular adipose depot

Voxels within the 10–30% FF range are shown for a selection of the group ($n=4$). For each participant three slices, ordered in the anterior-posterior direction, are presented. Only voxels above 10% are shown to emphasize the boundaries of the supraclavicular depot.



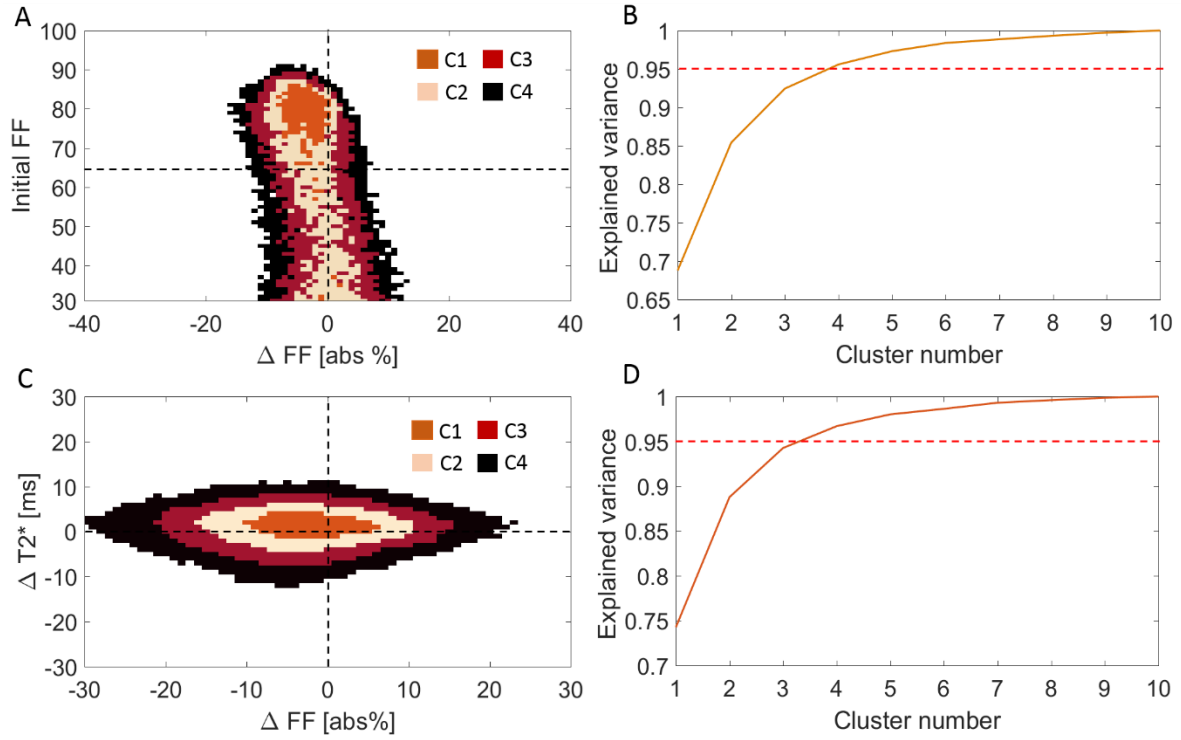
Supplemental Figure S3. Effects of different FF thresholding options on cold-induced global FF and T2* changes

Heatmap of the effect of different FF segmentation thresholds on the FF and T2* changes after cooling. (A) The color (second y-axis) depicts the FF for each lower (x-axis) and upper left (y-axis) FF threshold. The largest FF decrease is present with a lower threshold of 34% and no upper threshold. (B) The color (second y-axis) depicts the T2* for each lower (x-axis) and upper left (y-axis) threshold. The largest T2* decrease is present with a lower threshold of 90% and no upper threshold, however this was not found to be significant. The triangle in the lower right corner indicates invalid FF threshold options, as we implemented a minimum FF threshold of 30%. Data represent the mean of n=9 subjects.



Supplemental Figure 4. Fat fraction maps of the supraclavicular adipose depot with merged z-slices

Average FF value of voxels containing the same (x,y) position was extracted to construct the FF and FF variation maps. Voxels below 30% FF were thresholded in order to avoid inclusion of non-fatty tissue and to minimize partial volume interference. For thermoneutral and post-cooling FF maps, the red color indicates high lipid regions and the blue color — low-lipid regions. Cold-induced changes are represented by the red color for increased lipid content and the blue color for decreased lipid content.



Supplemental Figure S5. K-means cluster analysis for local assessment of supraclavicular adipose tissue baseline FF_{Loc} and cold-induced FF_{Loc} and $T2^*_{Loc}$ changes

The joint voxel distribution from Fig. 7D partitioned into four clusters (A). The optimal number of clusters was obtained by visual inspection of the explained variance plot (cut-off 95%): it was noted that the rise in explained variance became increasingly less after the fourth cluster (B). Clustered joint voxel distribution from Fig. 8C (C). Also for this analysis four clusters were used, based on the explained variance plot shown in (D). Data represent the mean of $n = 9$ subjects.