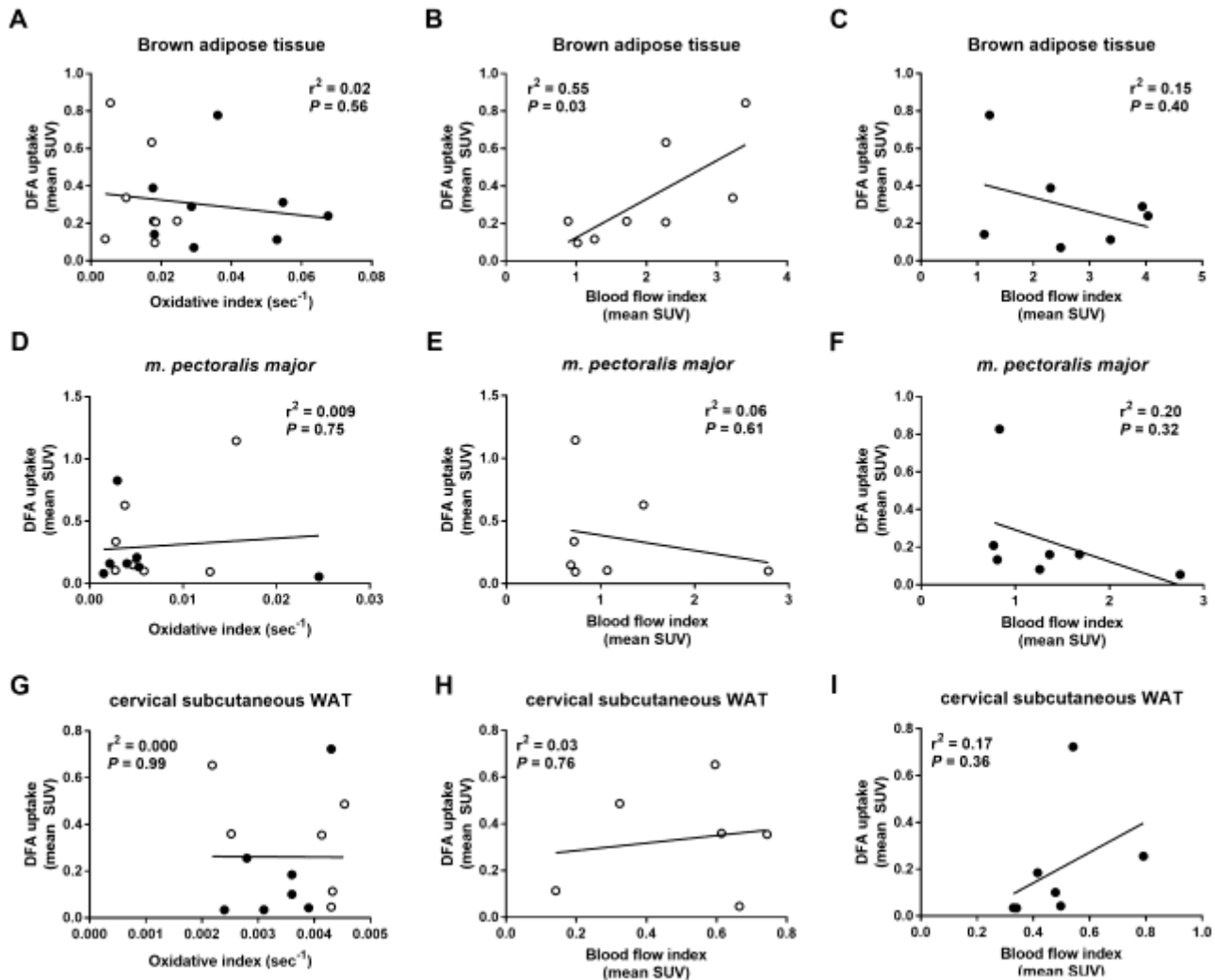
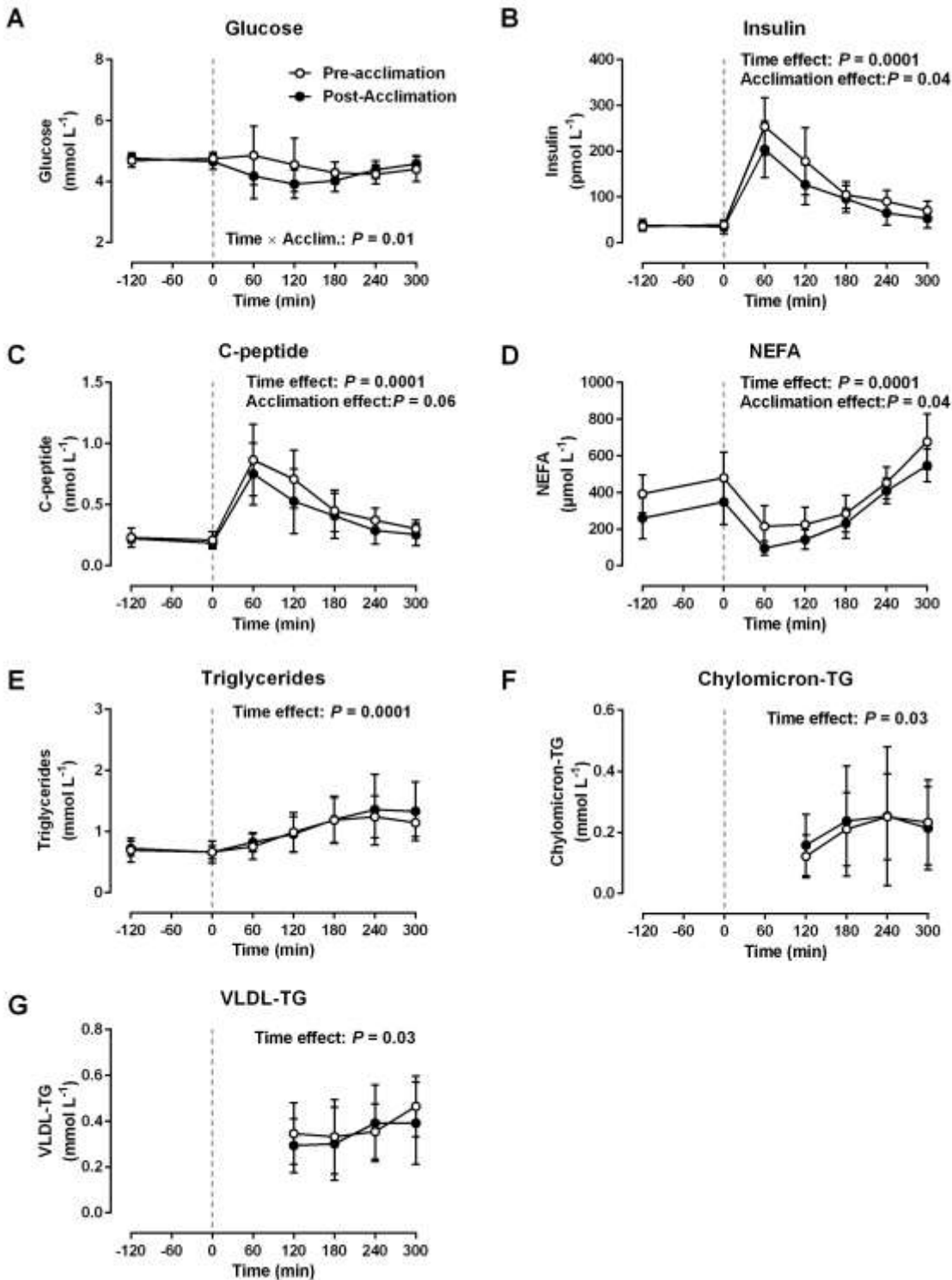


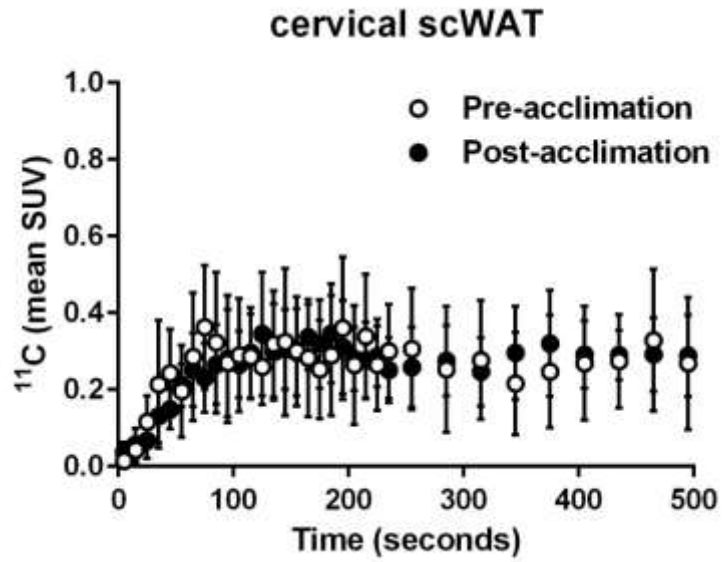
**Supplementary Figure 1. Study protocol.** Mean skin (closed circles) and inlet water temperature (open circles) of liquid-conditioned garment during typical cold acclimation session (N = 1), presented below timeline.



**Supplementary Figure 2.** Association between BAT dietary fatty acid uptake and BAT oxidative index (A) and BAT blood flow index pre-acclimation (B) and post-acclimation (C). Association between *m. pectoralis major* dietary fatty acid uptake and *m. pectoralis major* oxidative index (D) and *m. pectoralis major* blood flow index pre-acclimation (E) and post-acclimation (F). Association between cervical subcutaneous WAT dietary fatty acid uptake and cervical subcutaneous WAT oxidative index (G) and cervical subcutaneous WAT blood flow index pre-acclimation (H) and post-acclimation (I) (n= 8).



**Supplementary Figure 3.** Plasma glucose (A), insulin (B), C-peptide (C), NEFA (D), total TG (E), chylomicron-TG (F) and VLDL-TG (G) after standard liquid meal intake at time 0, pre- (open circles) and post-acclimation (closed circles). Data are reported as the mean with 95% CI,  $n = 8$ . Repeated measures two-way ANOVA with Bonferonni post-hoc test.



**Supplementary Figure 4.**  $^{11}\text{C}$  time-radioactivity curves over the first 500 s of acquisition after [ $^{11}\text{C}$ ]acetate injection before and after cold acclimation in cervical subcutaneous white adipose tissue. Data are reported as the mean with 95% CI, n = 8.