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Supplemental Information

Plasma Proteome Profiling Reveals Dynamics of Inflammatory and Lipid Homeostasis Markers after Roux-En-Y Gastric Bypass Surgery

Nicolai J. Wewer Albrechtsen, Philipp E. Geyer, Sophia Doll, Peter V. Treit, Kirstine N. Bojsen-Møller, Christoffer Martinussen, Nils B. Jørgensen, Signe S. Torekov, Florian Meier, Lili Niu, Alberto Santos, Eva C. Keilhauer, Jens J. Holst, Sten Madsbad, and Matthias Mann

SUPPLEMENTARY FIGURES

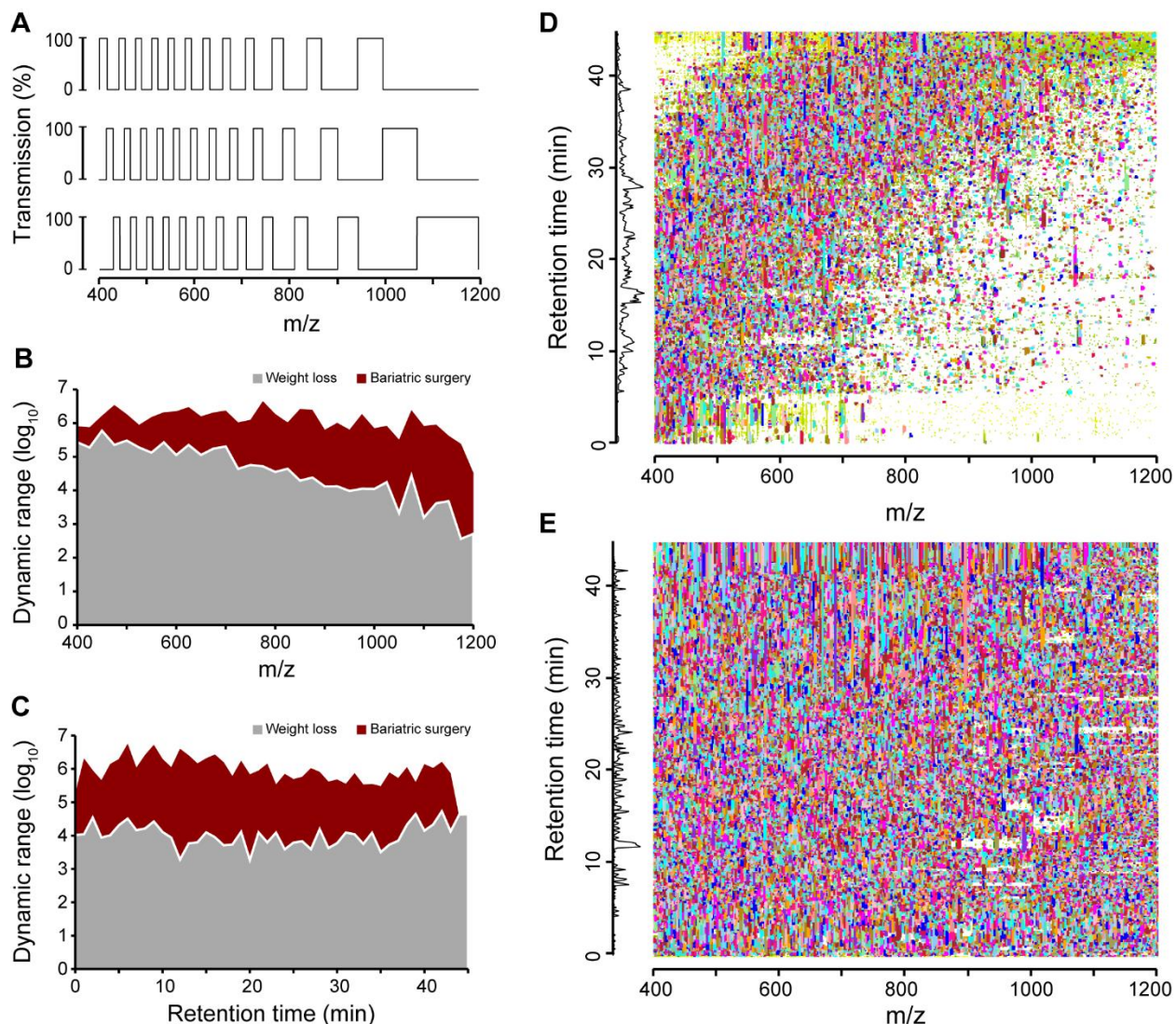


Figure S1 related to Figure 1: High dynamic range analysis of human plasma samples with BoxCar acquisition.

(A) In the BoxCar acquisition method, ions from narrow m/z windows are sequentially filled into the ion storage device of the Orbitrap mass analyzer, which effectively increases the filling times for low abundance ions of 10-fold or more. The schematic illustration indicates the window placement for three consecutive BoxCar scans in a single acquisition cycle as applied here.

(B) Intra-scan dynamic range of multiply charged isotope patterns as a function of m/z from representative single runs of both studies. The weight loss study has been acquired with standard full scans and the bariatric surgery with BoxCar scans.

(C) Intra-scan dynamic range of multiply charged isotope patterns as a function of the retention time for both studies.

(D) Visualization of isotope patterns detected in the m/z -retention time plane (color-coded) for standard full scans in the weight loss study.

(E) Visualization of isotope patterns detected in the m/z -retention time plane (color-coded) for BoxCar in the bariatric surgery study.

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Figure S2 related to Figure 1: MS-based measurements and sample quality.

(A) The levels of high abundant erythrocyte-specific proteins are shown for all samples. The data indicate a slight trend to higher erythrocyte lysis in study 1.

(B) Levels of the fibrinogen chains were used to detect coagulation events in plasma samples. No strong outliers were detected.

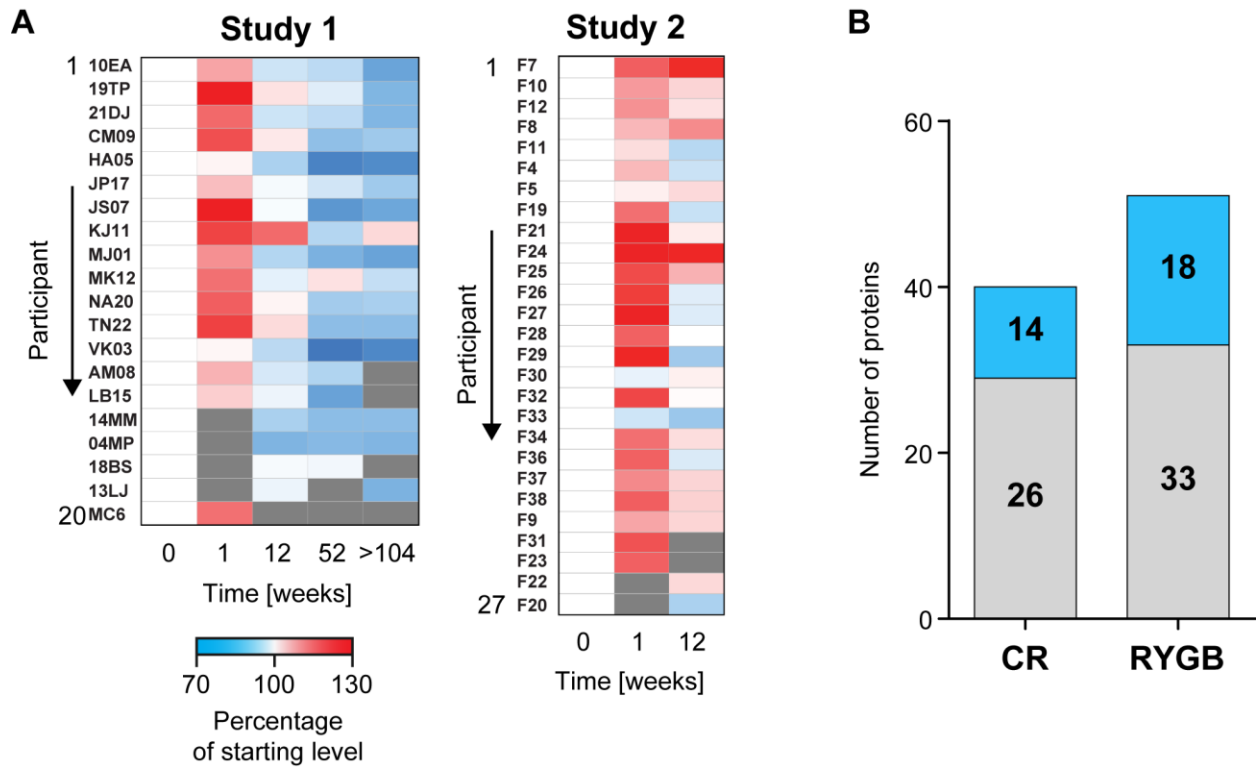


Figure S3 related to Figure 4: Inflammation panel.

(A) Global inflammation resolved on the individual level for both studies. The rows reflect the inflammation status for each study participant over time.

(B) In total, 18 of the BMI correlating proteins in the RYGB study were also part of the 51 inflammation proteins. In the caloric restriction study, 14 of the 40 BMI correlating proteins were part of the 51 protein containing inflammation panel.

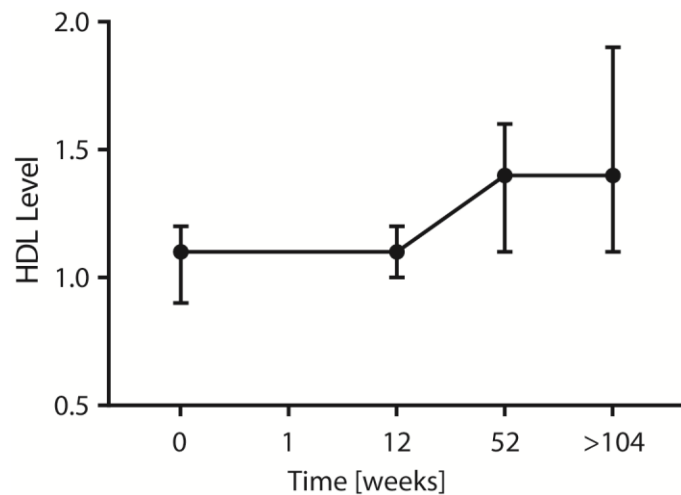


Figure S4 related to Figure 5: Trajectories of HDL levels over time.

The plot shows the HDL levels over time. The median is shown with 95% confidence intervals.

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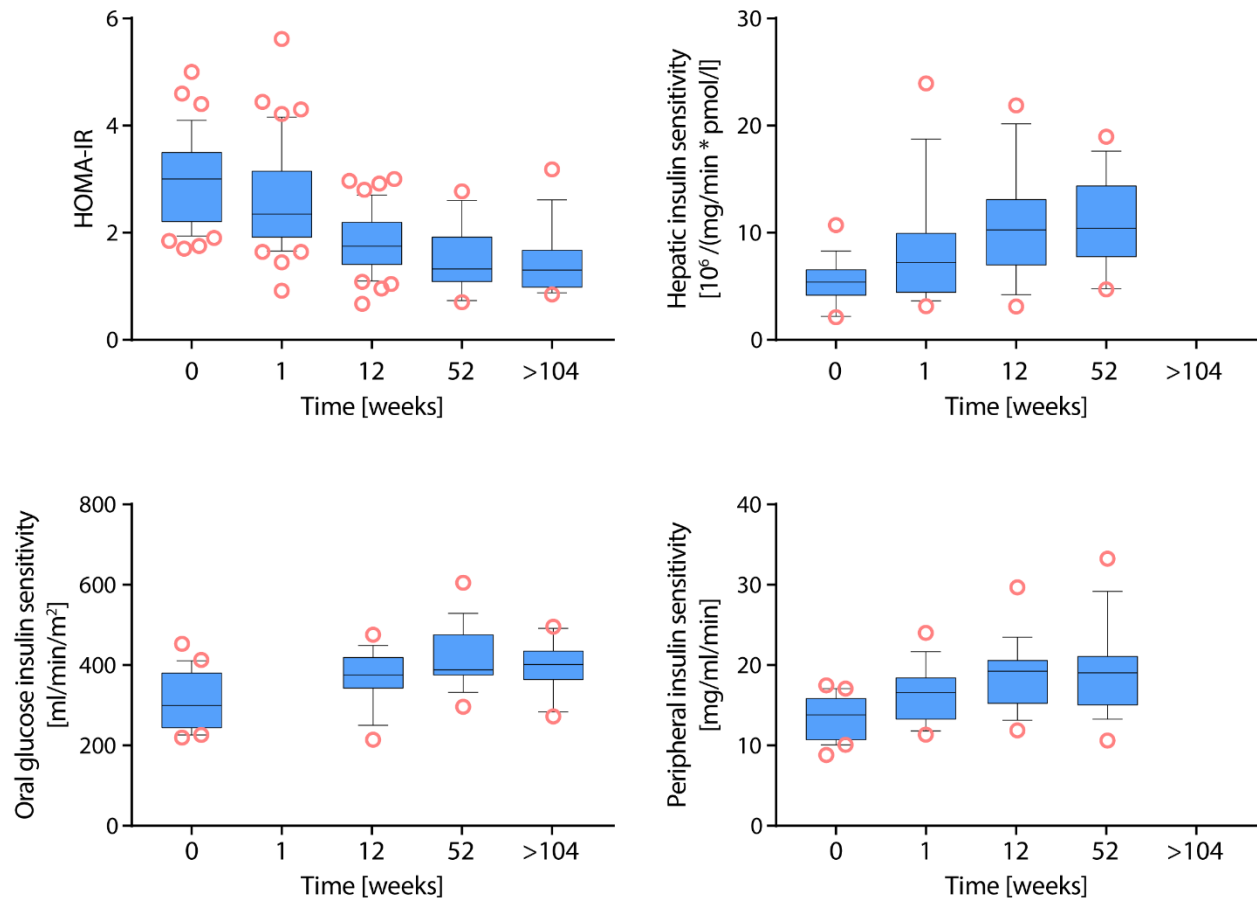


Figure S5 related to Figure 6: Four insulin sensitivity/resistance measurements before and after bariatric surgery.

The whiskers show the 10-90 percentile and the median is illustrated by the horizontal line in the boxplots.