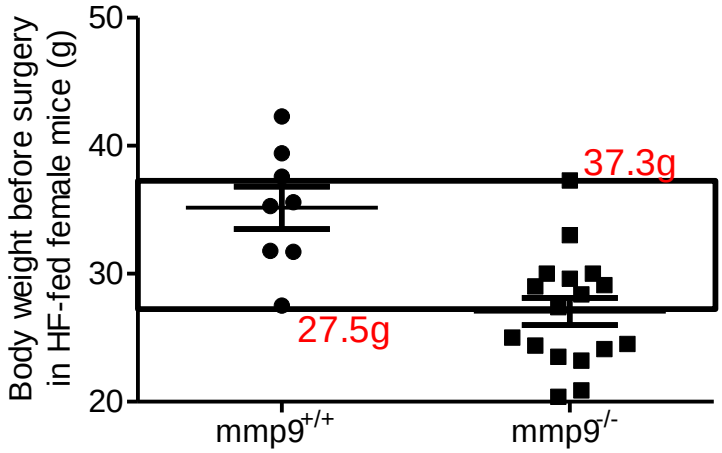

Figure S1 shows body weights of the HF-fed female mice after 15 weeks of HF feeding, before the surgical implantation of the carotid and jugular catheters. Since body weight is a strong independent determinant of insulin action, we defined the area of overlap, designated by the rectangle in the graph and restricted our assessment of insulin action to this area of overlap.

Variable	Covariate	*mmp9*$^{+/+}$ (kJ/hr (SEM))	*mmp9*$^{-/-}$ (kJ/hr (SEM))	P value
Dark EE	Body mass	1.72 (0.067)	1.72 (0.067)	0.8084
	Fat mass	1.72 (0.067)	1.72 (0.067)	0.8126
	Lean mass	1.72 (0.084)	1.72 (0.084)	0.8459
Light EE	Body mass	1.38 (0.067)	1.42 (0.067)	0.6667
	Fat mass	1.38 (0.071)	1.42 (0.071)	0.6750
	Lean mass	1.38 (0.084)	1.42 (0.084)	0.7268

Table S1. Energy expenditure (EE) was assessed in mice after 6 weeks of HF feeding, before the body weight of female *mmp9*$^{-/-}$ statistically diverged from the controls. Analysis of covariance (ANCOVA) was used to test energy expenditure for significance between groups using a public web portal developed by the National Mouse Metabolic Phenotyping Centers at http://www.mmpc.org/shared/regression.aspx. Multiple linear regression analysis was used to assess the impact of covariates (body mass, fat mass, and lean mass). Model-based statistics showed that energy expenditure (ANCOVA-adjusted group means) during both light and dark cycles were not different between genotypes regardless of the covariates.