

Supplemental table S12. Results of 2-Way ANOVA

Parameter	Diet	Hyperoxia	Interaction
Body weight difference [%, W29 vs. finals]	0.251	<0.001	0.208
Final body weight [g]	<0.001	<0.001	0.034
Fat, epididymal [g]	<0.001	<0.001	<i>0.071</i>
Fat, retroperitoneal [g]	<0.001	0.002	0.014
Fat, interscapular [g]	<0.001	0.184	0.353
Horowitz index [mmHg, pO ₂ /F _i O ₂]	0.845	<0.001	0.398
Blood pH	0.617	0.992	0.678
Bicarbonate [mmol/l]	0.004	<0.001	<i>0.093</i>
Total carbon dioxide [mmol/l]	0.002	<0.001	<i>0.073</i>
Oxygen saturation [%]	0.894	0.010	0.541
Oxygen partial pressure [mmHg]	0.746	0.006	0.361
Carbon dioxide partial pressure [mmHg]	0.201	<0.001	0.142
Quasi-static compliance [ml/cmH ₂ O]	0.423	<0.001	0.949
Hysteresis [ml x cmH ₂ O]	0.607	0.011	0.408
Left lung volume [mm ³]	0.032	0.101	0.274
Septal volume [mm ³]	0.320	0.707	1.000
Ductal airspace volume [mm ³]	<i>0.051</i>	0.003	0.413
Alveolar airspace volume [mm ³]	0.108	0.335	0.415
Septal surface area [cm ²]	<i>0.095</i>	<i>0.095</i>	0.132
Septal thickness [μm]	0.808	0.161	0.147
Mean linear intercept length [μm]	0.345	0.220	0.929
Surface area of intact AE1 cells [cm ²]	<i>0.062</i>	0.989	<i>0.096</i>
Surface area of fragmented AE1 cells [cm ²]	<i>0.059</i>	0.041	<i>0.059</i>
AE1 cell volume [mm ³]	0.006	0.281	0.042

AE2 cell volume [mm ³]	0.830	0.010	0.191
AE2 cell number	<i>0.065</i>	<0.001	0.101
Thickness of AE1 cells [μm]	0.046	0.919	0.183
Thickness of septal interstitium [μm]	0.720	0.286	<i>0.057</i>
Thickness of endothelial cells [μm]	0.027	0.013	0.118
Thickness of air-blood barrier [μm]	<i>0.073</i>	<i>0.088</i>	0.140
Volume of septal edema [mm ³]	0.185	0.044	0.185

Exact p-values are given. Significant p-values ($p < 0.05$) are shown in bold, p-values with a tendency to significance ($0.05 < p < 0.1$) are shown in italic letters.

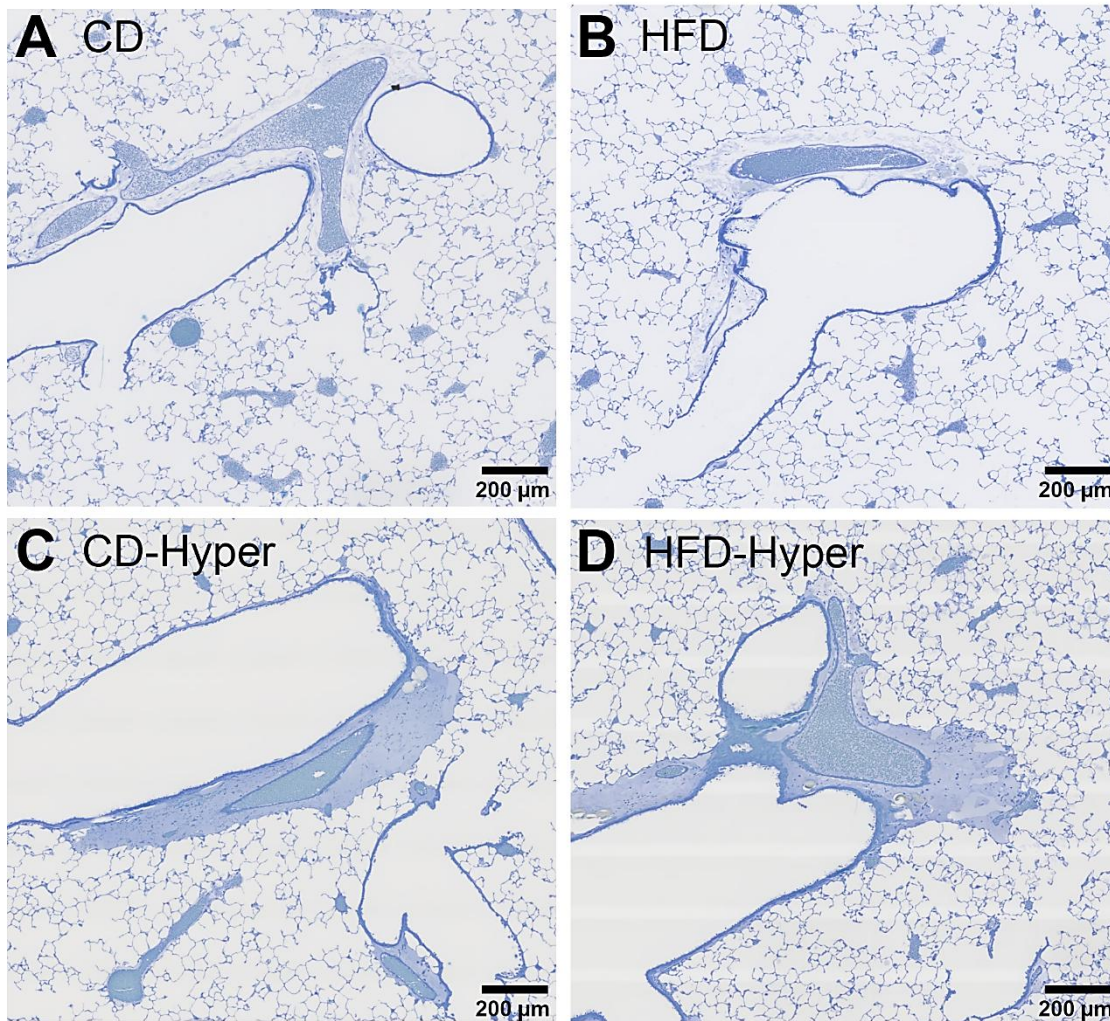


Fig. S1: Images of peribronchovascular region of experimental groups at light-microscopical level. Images of hyperoxic groups show peribronchovascular edema. Please note that regions without edema were also present in the hyperoxic groups, therefore a detailed morphometric quantification of edema was performed.

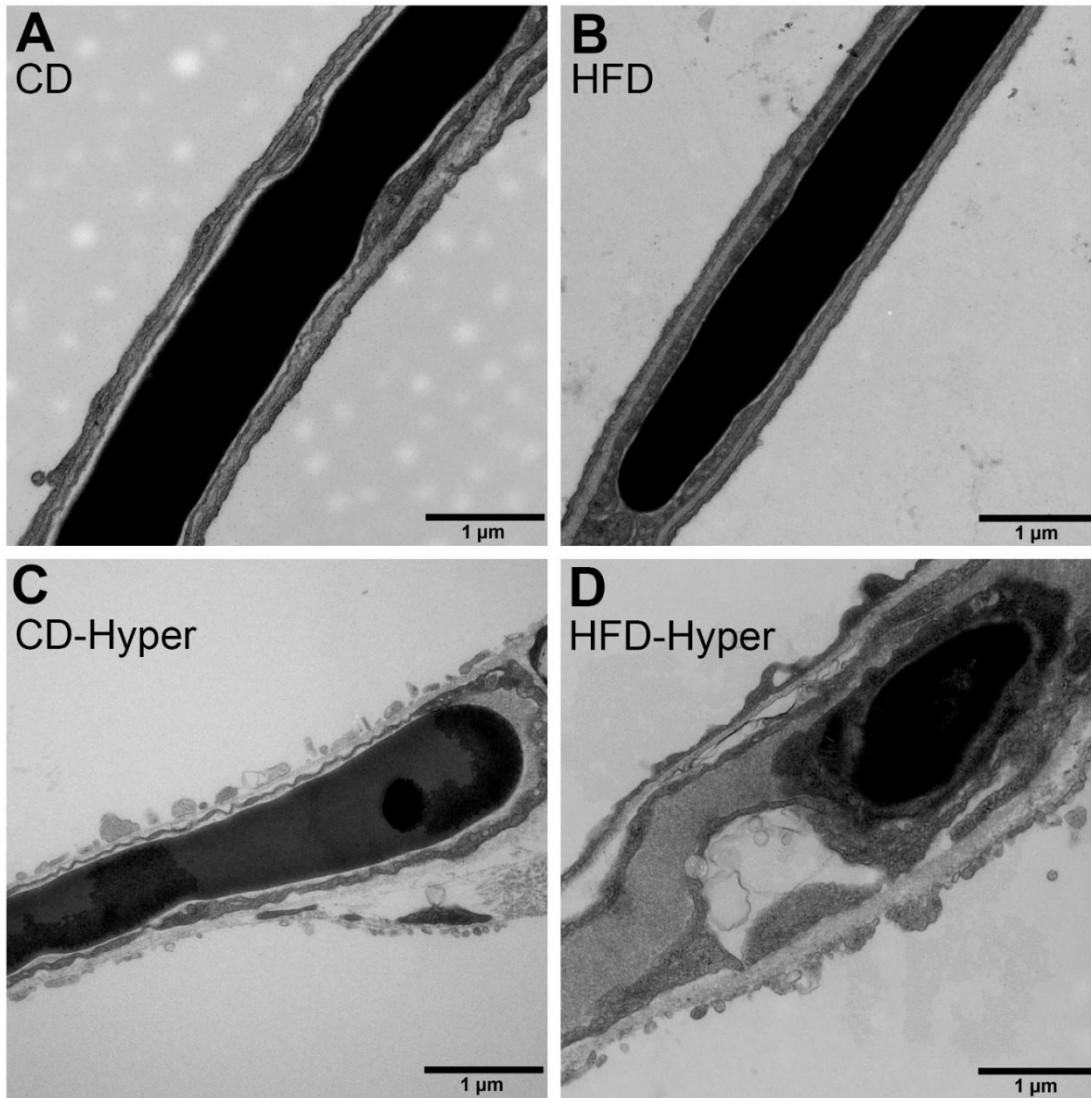


Fig. S2: Images of lung structure of experimental groups at electron-microscopical level. Images of hyperoxic groups show epithelial cell damage and septal edema. Please note that intact septa were also present in the hyperoxic groups, therefore a detailed morphometric quantification of epithelial damage and edema was performed.

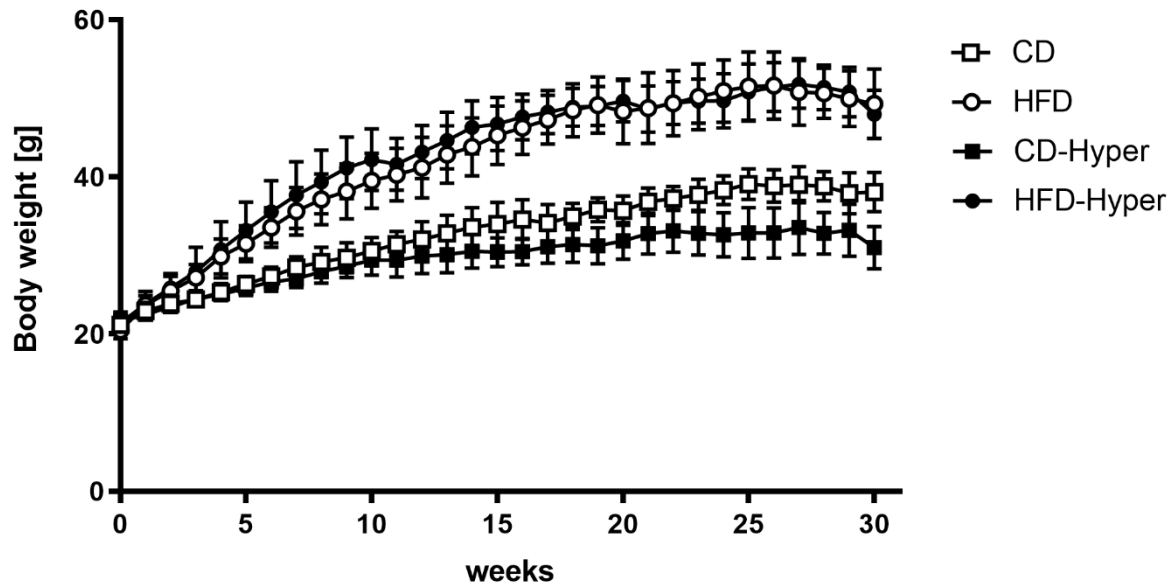


Fig. S3: Body weight. Symbols reflect group means, standard deviations are indicated.

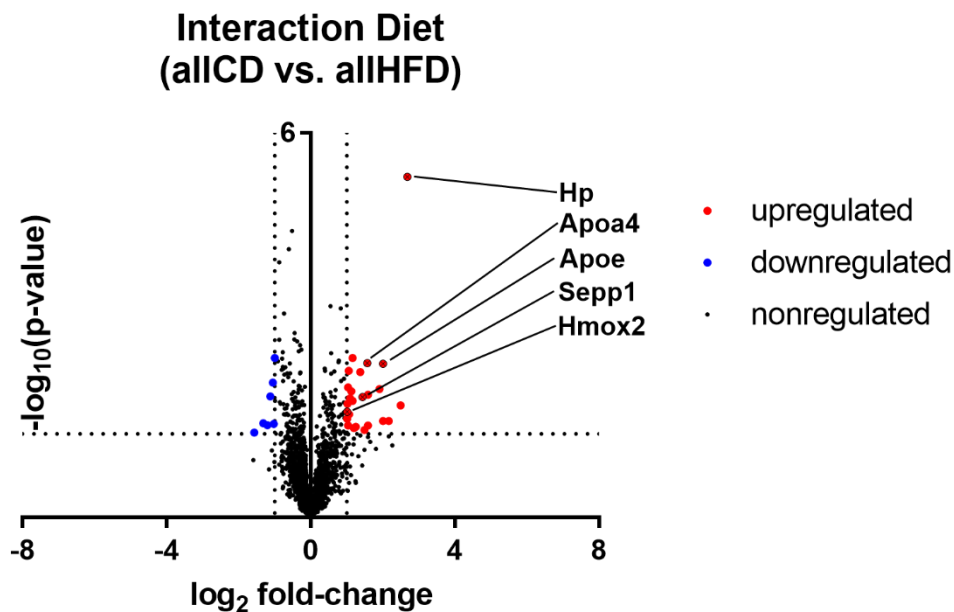


Fig. S4: Effect of factor diet on differentially expressed pulmonary proteins. Volcano plots, dashed lines represent i) $-\log_{10} p > 1.301$ and ii) $\log_2 \text{fold-change} > 1.0$ or < -1.0 ; proteins beyond these thresholds are color-coded in blue for reduced abundance and in red for increased abundance; single proteins are highlighted and labelled with their names.

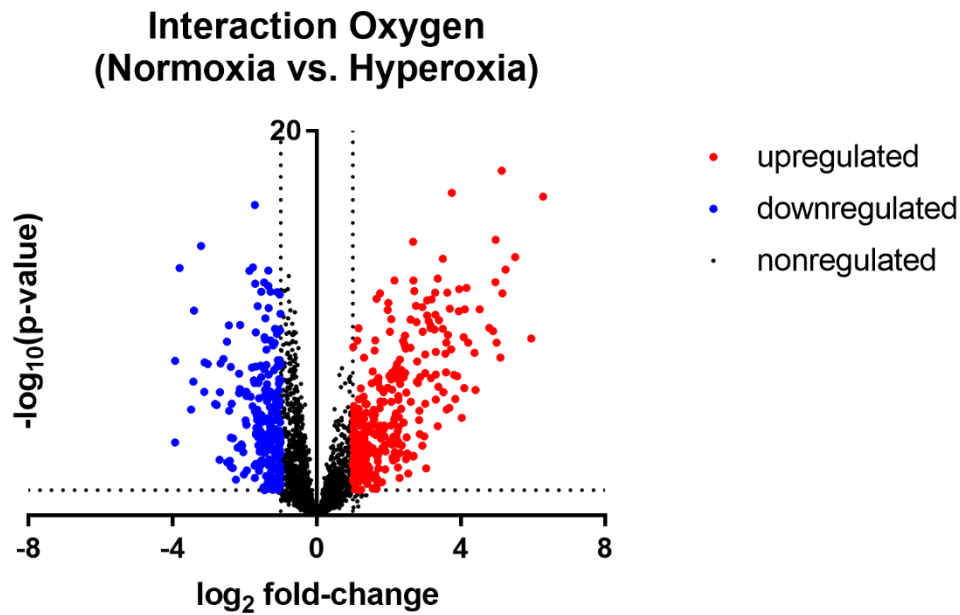


Fig. S5: Effect of factor oxygen on differentially expressed pulmonary proteins. Volcano plots, dashed lines represent i) $-\log_{10} p > 1.301$ and ii) $\log_2\text{-fold change} > 1.0$ or < -1.0 ; proteins beyond these thresholds are color-coded in blue for reduced abundance and in red for increased abundance.

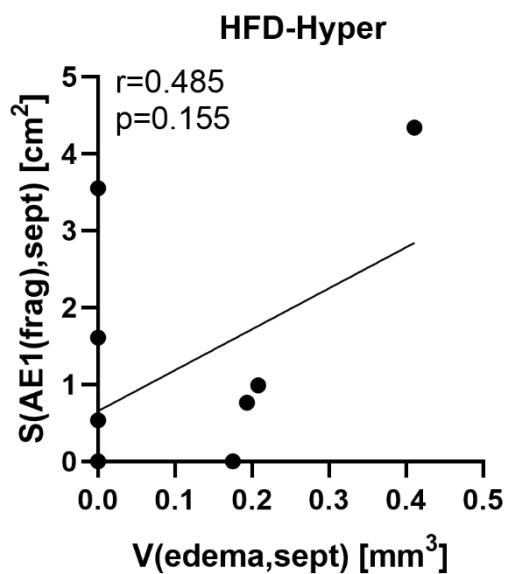


Fig. S6: Correlation analysis of septal edema and alveolar epithelial damage in HFD-Hyper. Correlation of surface area of fragmented AE1 cells with edema volume in HFD-Hyper group, $n=10$; linear regression indicated as line; statistics: Pearson correlation analysis, Pearson's r and p -values shown.