Individualized positive end-expiratory pressure and regional gas exchange in porcine lung injury

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**Supplemental Digital Content 12 - Results from densitometric CT analyses**

Comparable degrees of lung tissue aeration were found with both *maximal-oxygenation-PEEP* and *minimal-tidal-recruitment-PEEP* settings. In contrast, *table-PEEP* led to significant decrease in lung aeration (repeated measures ANOVA, P<0.05 for factors HU-distribution, PEEP, and their interaction, respectively figure S4).

## *Figure S4*

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Densitometric analysis of the lung during ongoing ventilation with table-PEEP ,maximal-oxygenation-PEEP (OXmax-PEEP) and minimal-tidal-recruitment-PEEP (TRmin-PEEP), respectively; obtained from transmission scans during SPECT; Gas content increases from the right (0 HU, no gas, to the left (-1000 HU, 100% gas); given as mean and SD in voxel per Hounsfield units; repeated measures ANOVA, P<0.05 for factors HU-distribution, PEEP, and their interaction, respectively.

Total lung volume was reduced with *table-PEEP* when compared to *maximal-oxygenation-PEEP* and *minimal-tidal-recruitment-PEEP* settings (figure S5). Reduced lung volume during *table-PEEP* was associated with a reduction in normally aerated lung tissue (figure S5) but an increase in non-aerated lung tissue volume (figure S5). Total gas content was lower with *table-PEEP* when compared to both *maximal-oxygenation-PEEP* and *minimal-tidal-recruitment-PEEP* settings (figure S5).

## *Figure S5*



left: total lung volume obtained from transmission CT scans during SPECT, repeated measures ANOVA, P<0.05; right: distribution of total lung volume to differentially aerated lung tissue compartments given as mean and SD in ml; repeated measures ANOVA, P<0.05 for factors aeration distribution, PEEP, and their interaction, respectively

Total lung mass did not differ between PEEP modes (figure S6). However, non-aerated lung tissue mainly contributed to total lung mass during *table-PEEP* settings (figure S6), whereas lung mass essentially consisted of normally aerated lung tissue (figure S6) with both *maximal-oxygenation-PEEP* and *minimal-tidal-recruitment-PEEP* settings.

## *Figure S6*



left: total lung mass obtained from transmission scans during SPECT, repeated measures ANOVA, n.s.; right: distribution of total lung mass to differentially aerated lung tissue compartments given as mean and SD in g; repeated measures ANOVA, P<0.05 for factors aeration distribution, PEEP, and their interaction, respectively