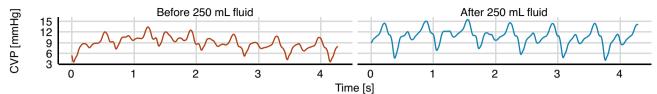
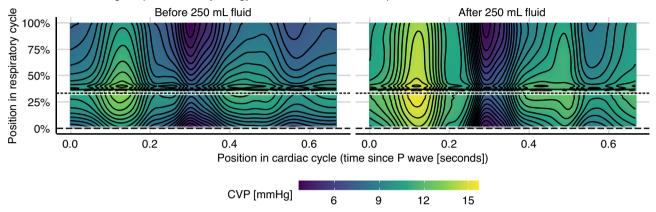
a - Observed CVP

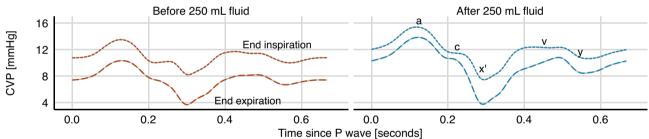
One respiratory cycle is shown (models are fitted on 60 second CVP recordings). Heart rate is 87 min⁻¹ before fluid and 90 min⁻¹ after.



b - Predicted CVP for all combinations of *time since P wave [seconds]* and *position in respiratory cycle* Contour height represent CVP [mmHg]. This is the full model, except trend over time.



 \boldsymbol{c} - Predicted CVP through a cardiac cycle at two positions in the respiratory cycle Lines correspond to the horizontal lines in panel B



d - Individual smooth effects and partial residuals

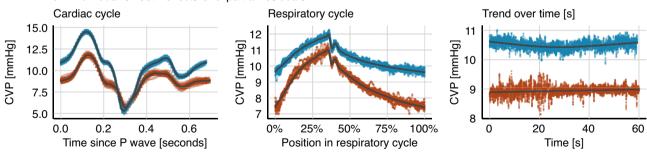


Fig. 6 Comparison of sections of a generalized additive model (GAM). The model is fitted to two one-minute sections of central venous pressure (CVP) recordings. One section before a 250 ml fluid

infusion and one after. A grey shade in panel **c** represents 95% confidence intervals (often too narrow to be visible). The constant terms (α and β_s) are included in all predictions (**b**, **c** and **d**)

