

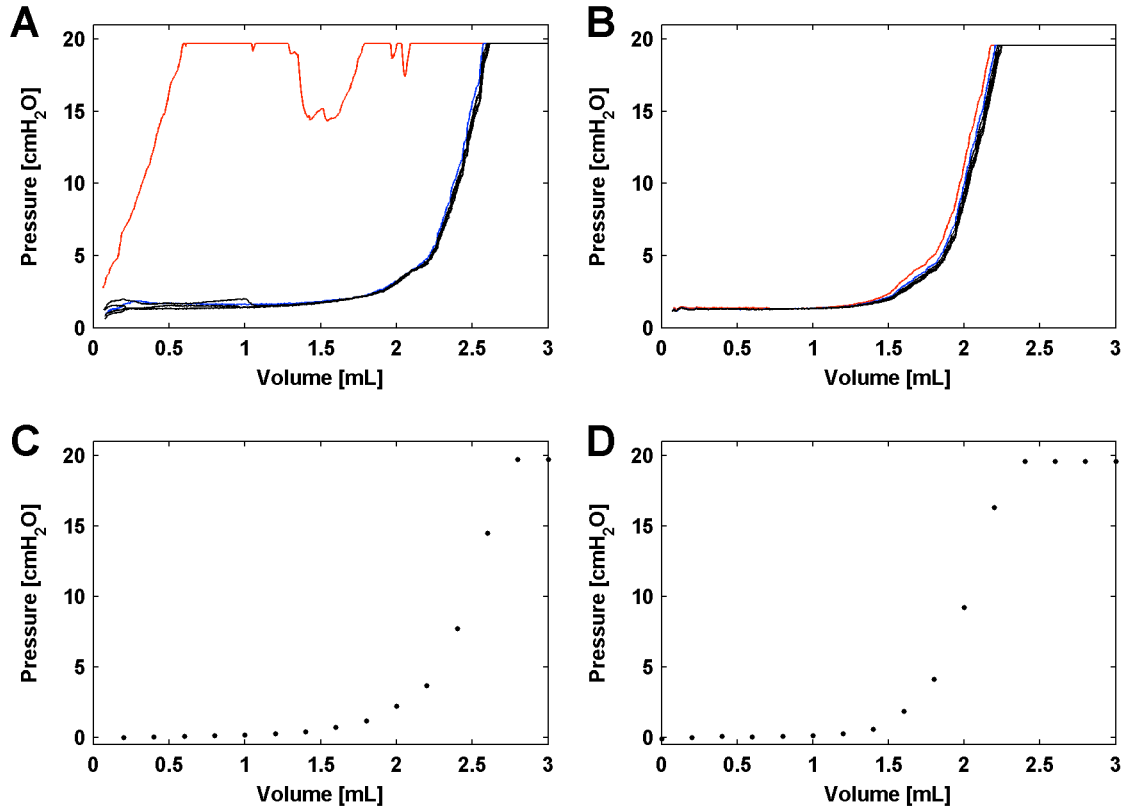
**E-Table 1.** Properties of the investigated catheters

Type	Material Catheter/ Balloon	Length [cm]	Diameter OD/ID [mm]	Balloon Position	Balloon length/OD [mm]	max. volume [mL]
Double-lumen-catheter (Bösch, Gottenheim, Germany)	Polyurethane /Elastollan	130	2.35/2x0.9	DBC	60/10	4
CooperSurgical (Leisegang Feinmechanik GmbH Berlin, Germany)	PTFE (PolyTetrafluoroEthylen)	87	N/A	SBC	100/x	4
nSpire, (ZAN, Oberthulba, Germany)	N/A	N/A	N/A	DBC	N/A	4
SmartCath 16 FR Adult, (VIASYS, Palm Springs, CA, USA)	N/A	N/A	N/A	SBC	N/A	6
SmartCath 8 FR Adult, (VIASYS, Palm Springs, CA, USA)	N/A	103	3/	SBC	100/	4
NutriVent (SIDAM s.r.l., San Giacomo, Italy)	Polyurethane/ Polyethylene	110	4.7	DBC	100/15	6

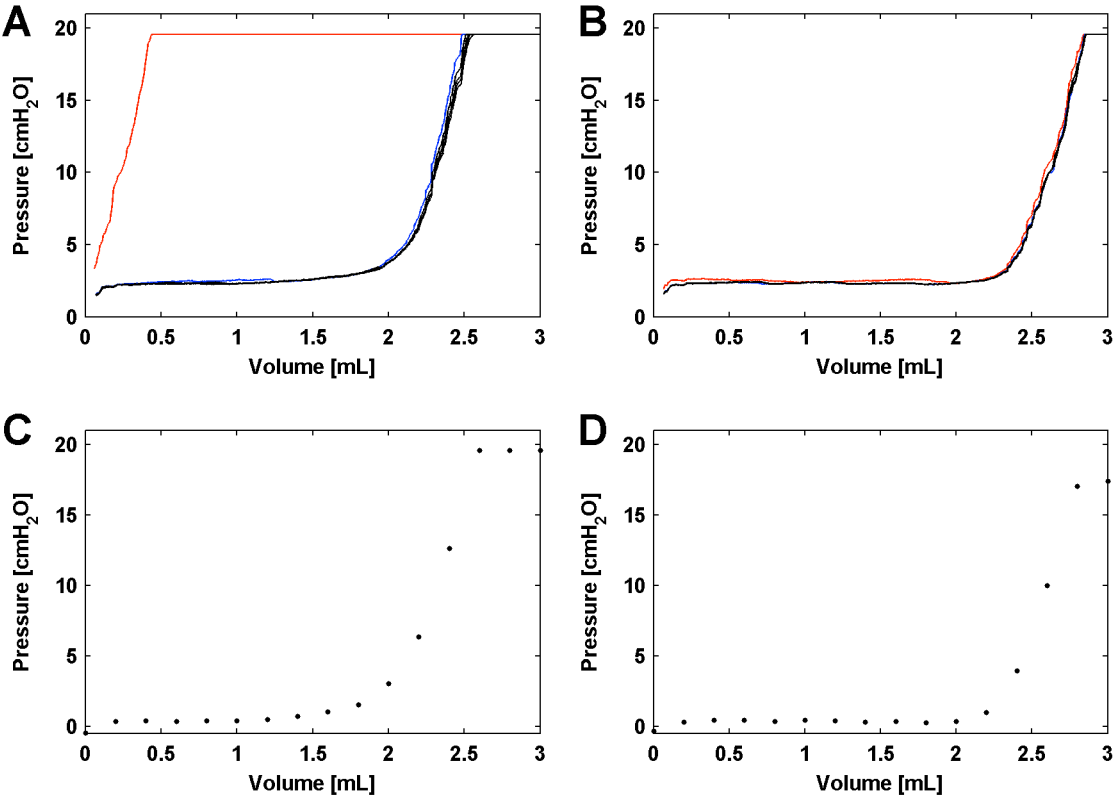
Table legend: N/A = not available/applicable, SBC = single balloon catheter, DBC = double balloon catheter. max. volume: filling volume according to Experiment I

### E-Figure1 - Detailed pressure volume curves of each balloon catheter system

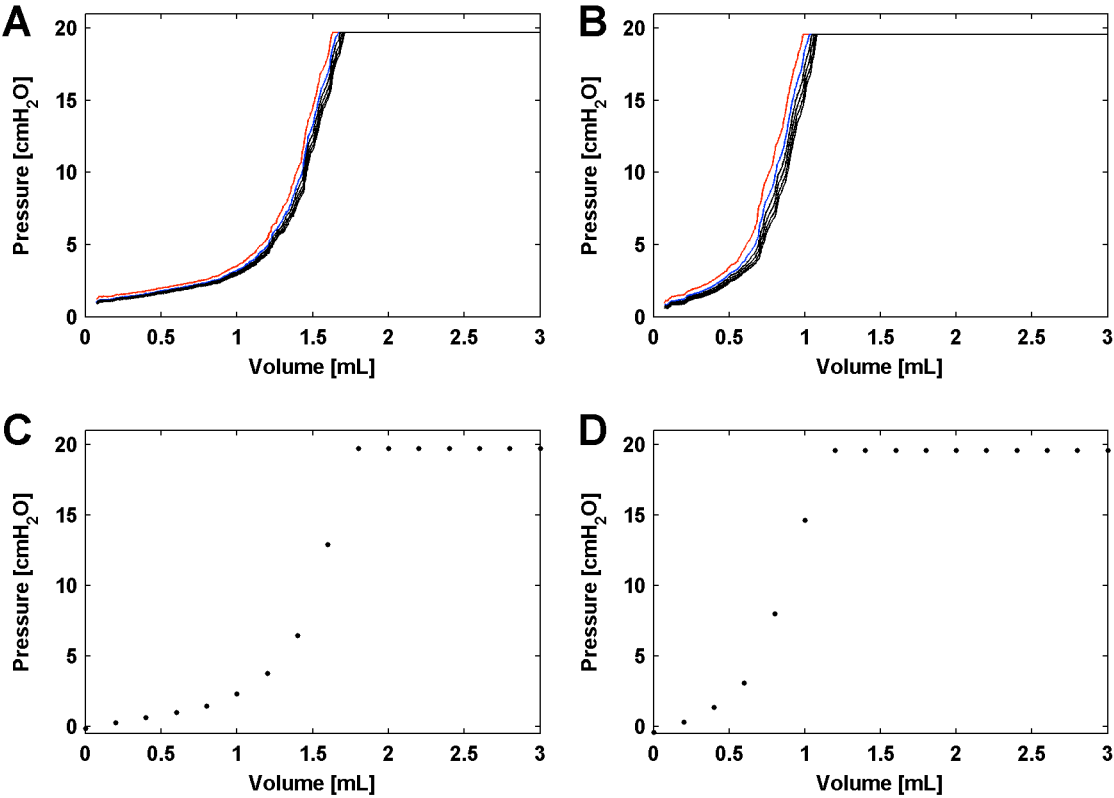
**Supp. 1.** Pressure-volume relationship of Bösch DLC proximal balloon during dynamic (A, B) and static (C, D) inflation. A, C: static curves immediately after unpacking. B, D Inflation curves measured after experiments and 16 hours of balloon overdistension. Red: first, blue: second, black: following (third to sixth) inflation curves.



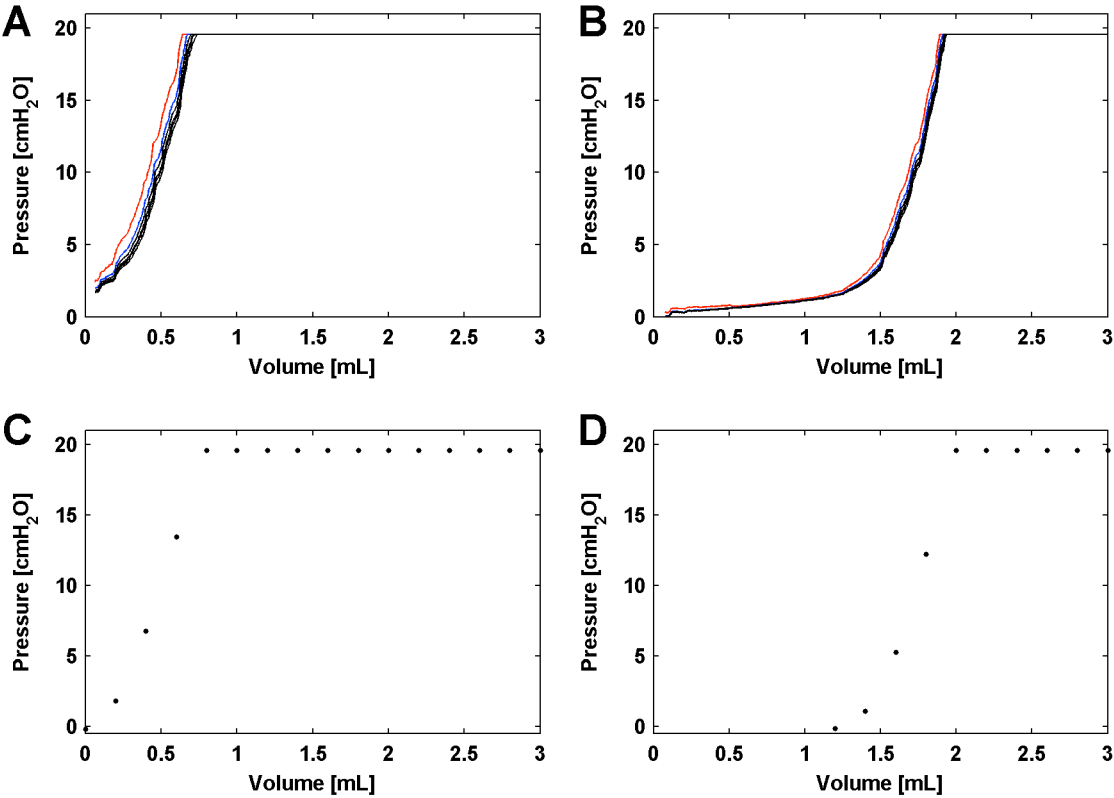
**Supp. 2.** Pressure-volume relationship of Bösch DLC distal balloon. For description please refer to legend of Supp. 1.



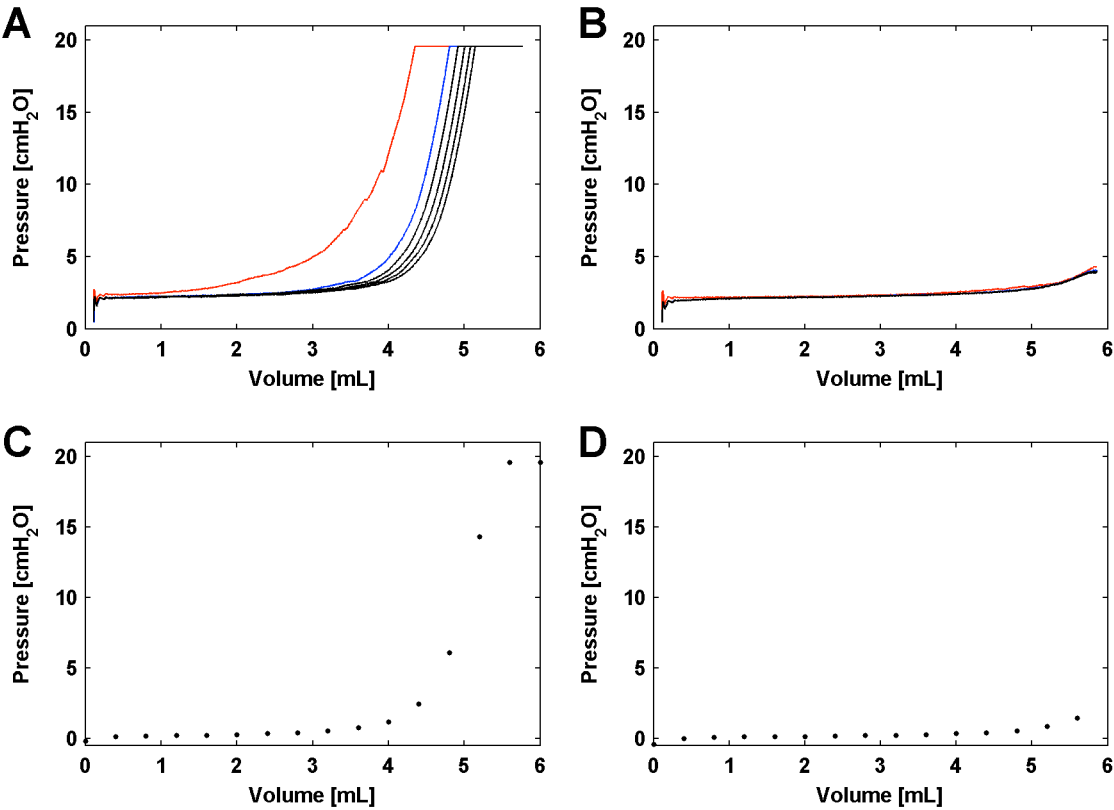
**Supp. 3.** Pressure-volume relationship of ZAN nSpire proximal balloon. For description please refer to legend of Supp. 1.



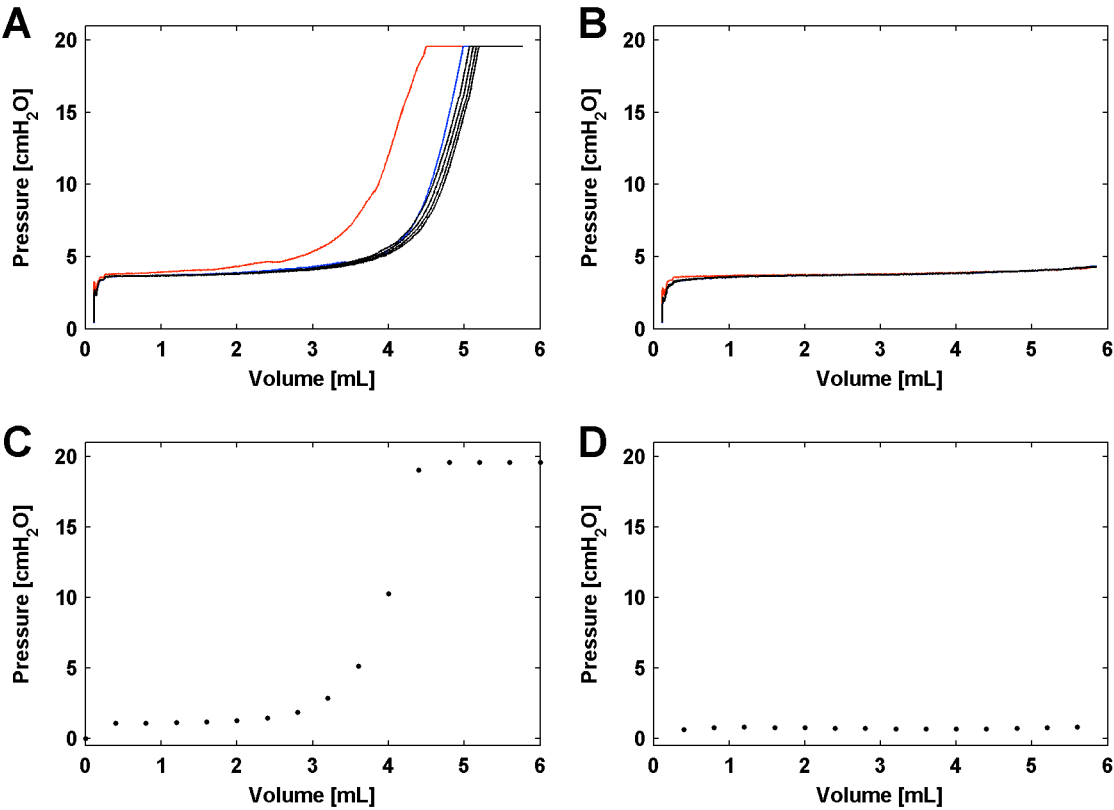
**Supp. 4.** Pressure-volume relationship of ZAN nSpire distal balloon. For description please refer to legend of Supp. 1.



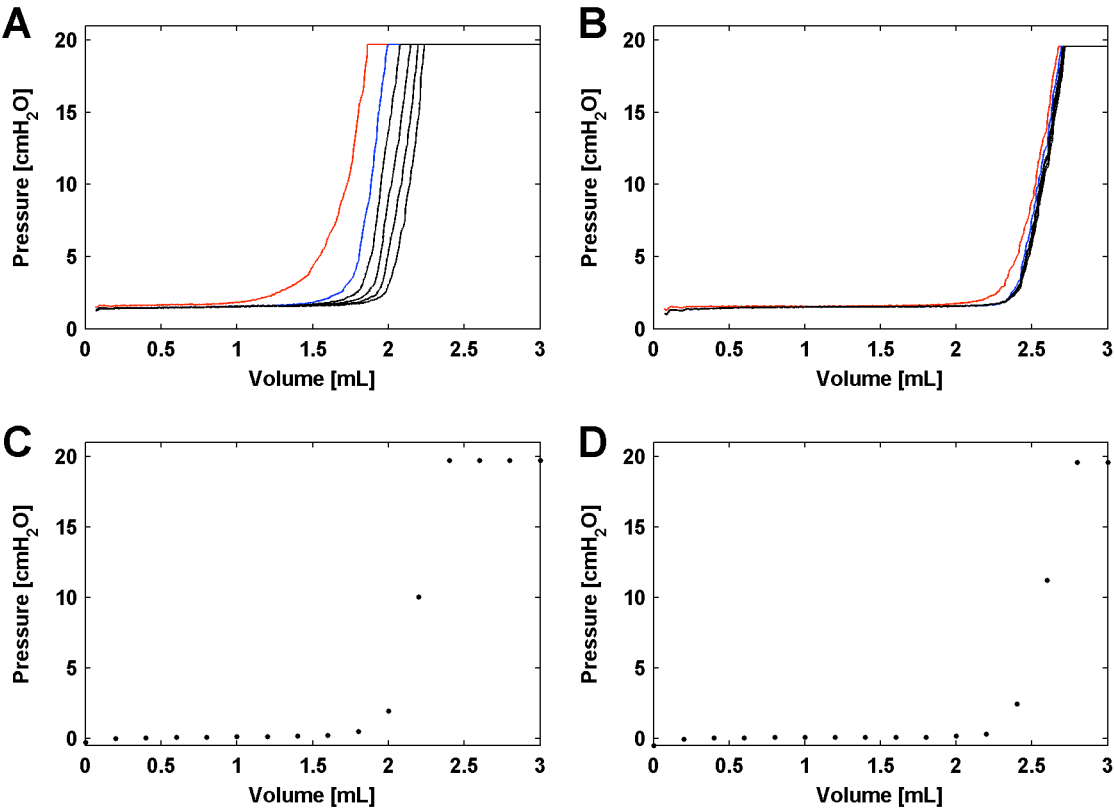
**Supp. 5.** Pressure-volume relationship of Nutrient proximal balloon. For description please refer to legend of Supp. 1.



**Supp. 6.** Pressure-volume relationship of Nutrivent distal balloon. For description please refer to legend of Supp. 1.

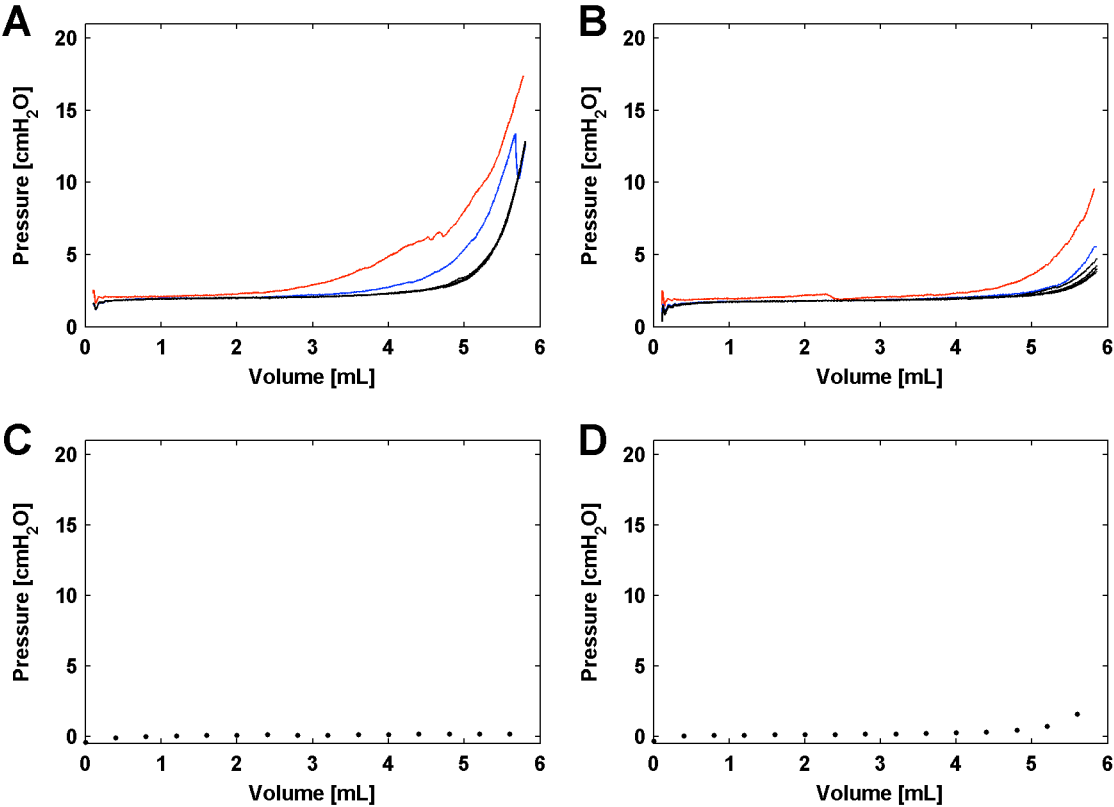


**Supp. 7.** Pressure-volume relationship of Copper Surgical balloon. For description please refer to legend of Supp. 1.

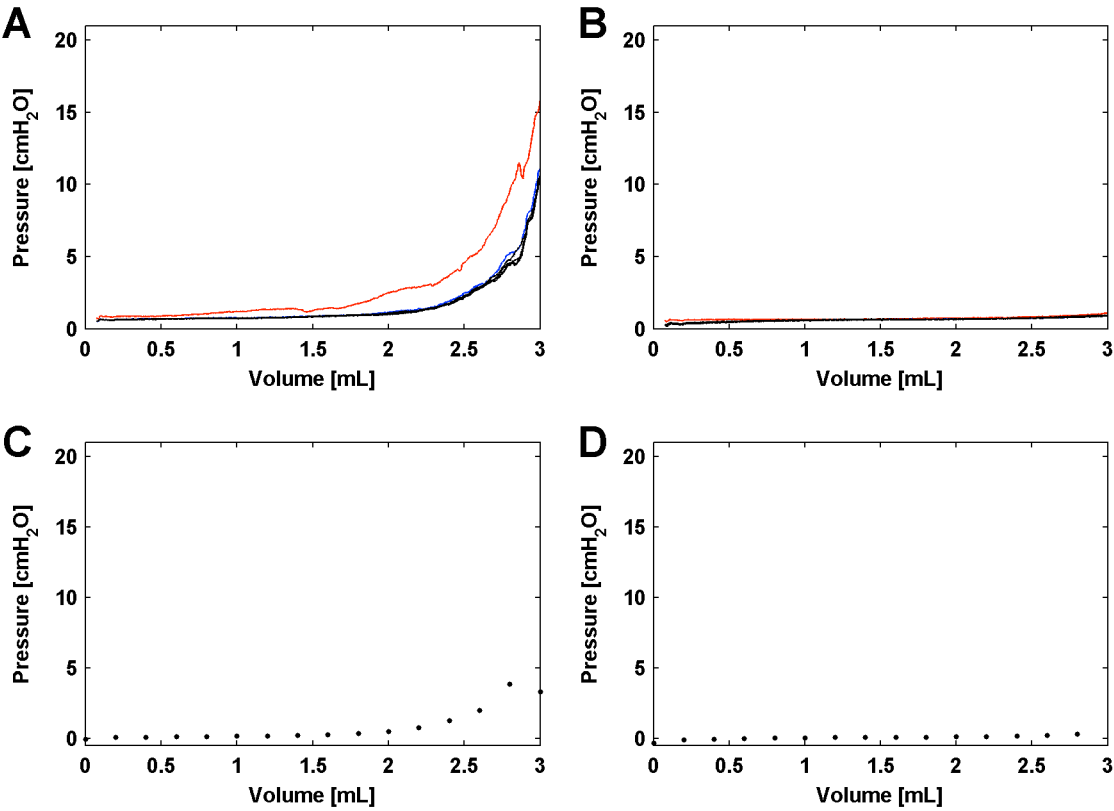




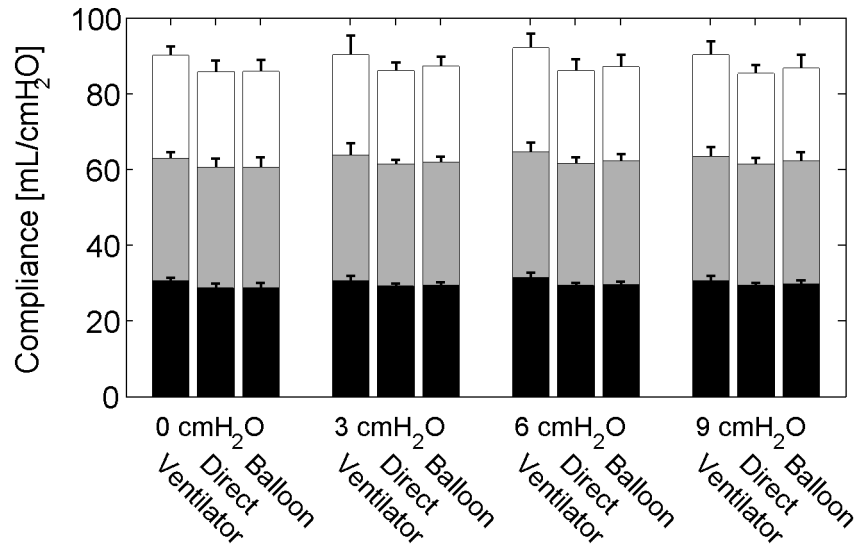
**Supp. 8.** Pressure-volume relationship of Viasys 16 FR balloon. For description please refer to legend of Supp. 1.



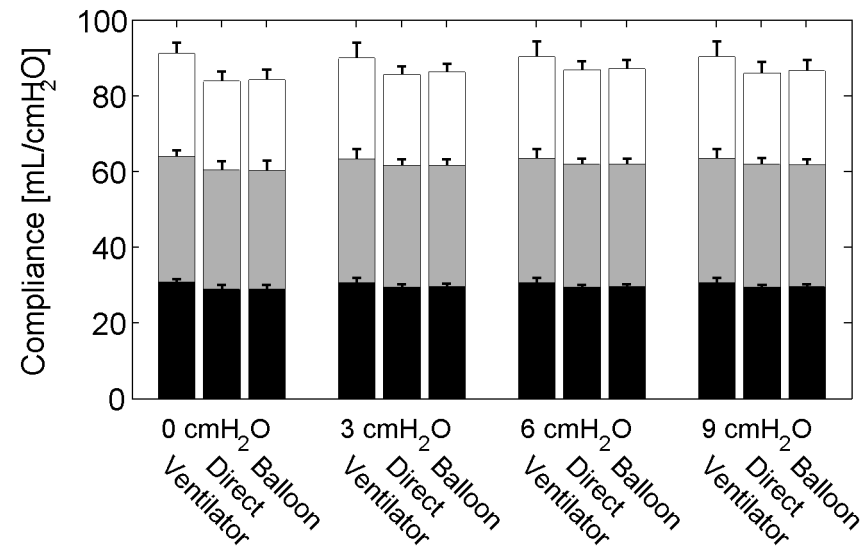
**Supp. 9.** Pressure-volume relationship of Viasys 8 FR balloon. For description please refer to legend of Supp. 1.



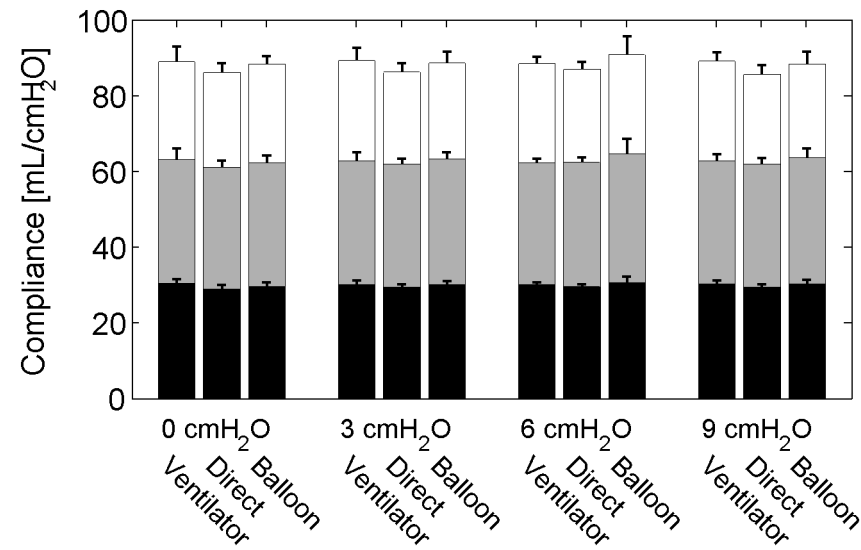
**Supp. 10.** Comparison of compliance measurements from ventilator (Evita 4, Dräger medical, Lübeck, Germany), direct pressure measurement and measurement via a pressure sensor and by pressure measurement via the distal balloon of Bösch DLT catheter at different levels of superimposed pressure (0 – 9 cmH<sub>2</sub>O). White bars: Compliance model of 86 mL/cmH<sub>2</sub>O. Grey bars: Compliance model of 62 mL/cmH<sub>2</sub>O, Black bars: Compliance model of 30 mL/cmH<sub>2</sub>O



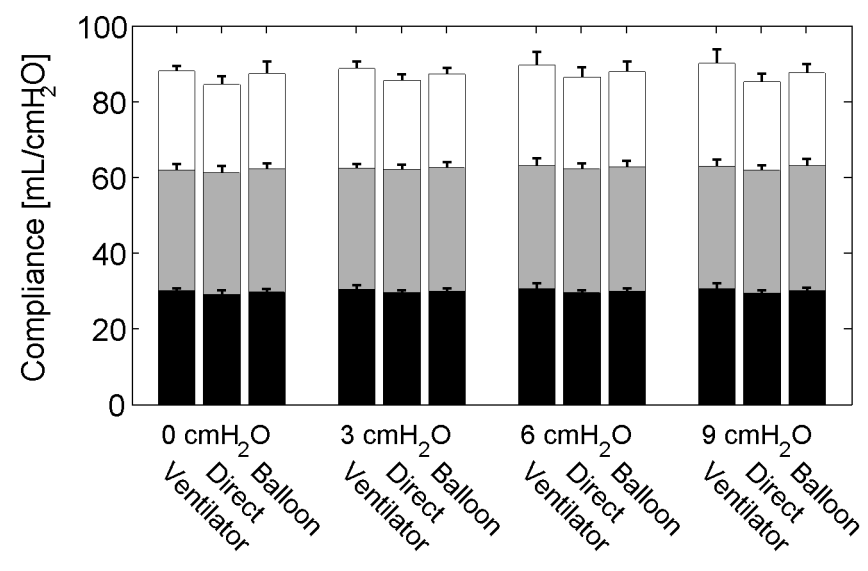
**Supp. 11.** Comparison of compliance measurements from ventilator, direct pressure measurement and measurement via the distal balloon of Bösch DLT catheter. For further description please refer to legend of Supp. 10.



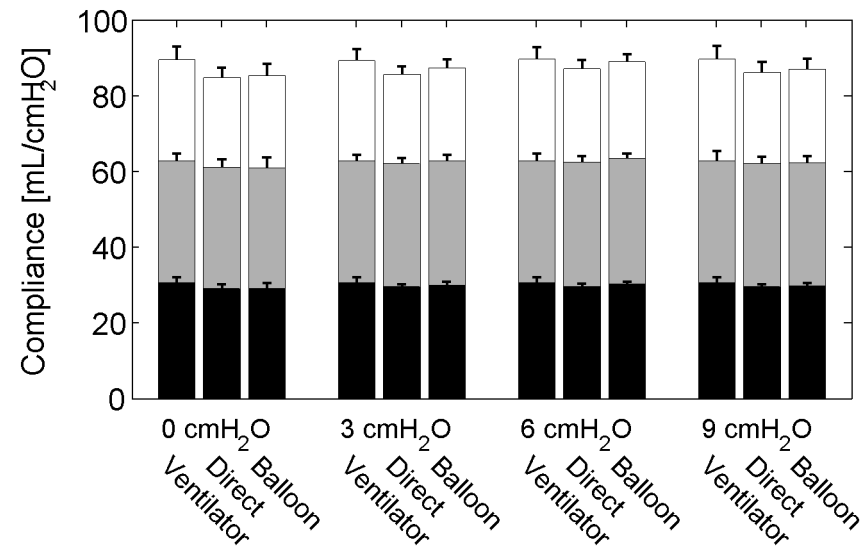
**Supp. 12.** Comparison of compliance measurements from ventilator, direct pressure measurement and measurement via the proximal balloon of ZAN nSpire catheter. For further description please refer to legend of Supp. 10.



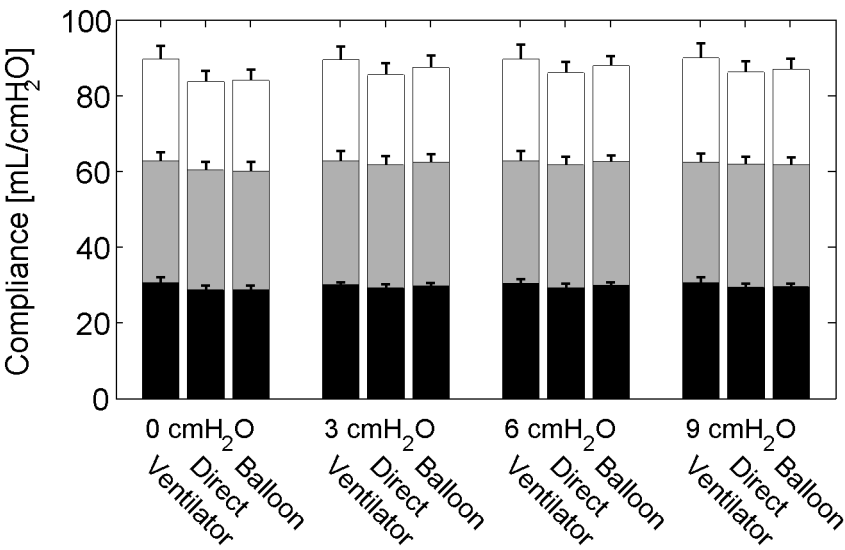
**Supp. 13:** Comparison of compliance measurements from ventilator, direct pressure measurement and measurement via the distal balloon of ZAN nSpire catheter. For further description please refer to legend of Supp. 10.



**Supp. 14:** Comparison of compliance measurements from ventilator, direct pressure measurement and measurement via the proximal balloon of Nutrivent catheter. For further description please refer to legend of Supp. 10.

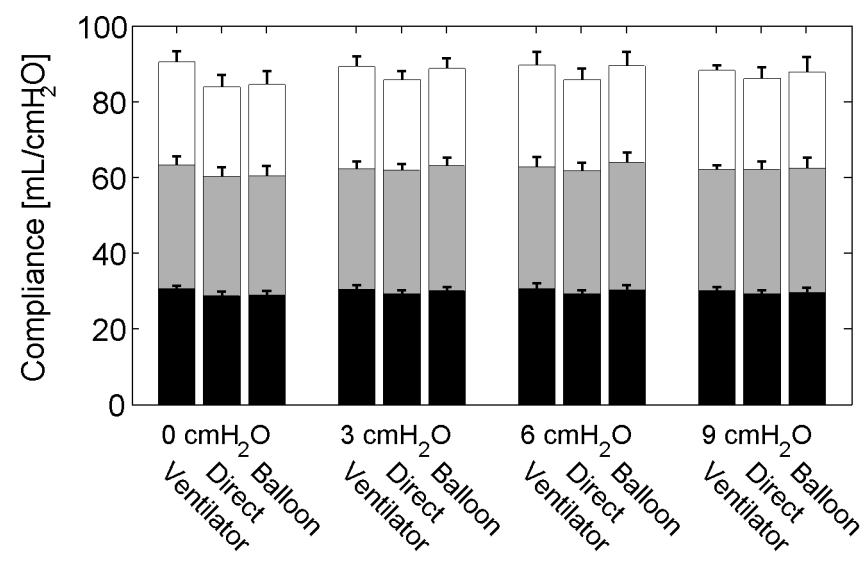


**Supp. 15:** Compliance determined via pressure measurement via the distal balloon of Nutrivent catheter. For further description please refer to legend of Supp. 10.

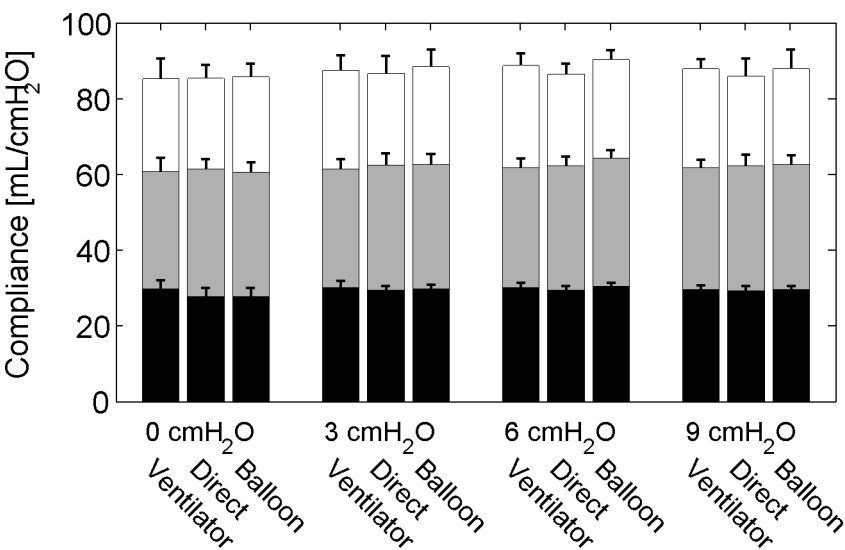




**Supp. 16:** Comparison of compliance measurements from ventilator, direct pressure measurement and measurement via the balloon of Copper Surgical catheter. For other description please refer to legend of Supp. 10.



**Supp. 17:** Comparison of compliance measurements from ventilator, direct pressure measurement and measurement via the balloon of Viasys 16 FR catheter. For other description please refer to legend of Supp. 10.



**Supp. 18:** Comparison of compliance measurements from ventilator, direct pressure measurement and measurement via the distal balloon of Viasys 8 FR catheter. For other description please refer to legend of Supp. 10.

