

**Table S6:** Change in time averaged wall shear stress (TAWSS), oscillatory shear index (OSI) and particle relative residence time (RRT) for each region of the CoW (see Figure 2A) from rest to hypercapnia. Units for TAWSS = Pa, OSI = dimensionless and RRT = 1/Pa.

Case	LA1			RA1			LPComA			RPComA		
	TAWSS	OSI	RRT	TAWSS	OSI	RRT	TAWSS	OSI	RRT	TAWSS	OSI	RRT
1	6.11	0.02	-0.08	11.60	0.02	-0.16	14.59	0.03	-0.10	7.11	0.01	-0.40
2	1.35	0.01	-0.19	11.97	0.00	-0.13	6.04	-0.01	-0.44	16.16	0.01	-0.14
3	1.73	0.01	-0.10	2.90	-0.25	-2.85	0.93	0.02	-0.06	1.26	-0.04	-0.38
4	3.95	0.02	-0.23	-0.29	0.13	0.41	0.19	-0.11	-0.13	-0.40	-0.02	0.01
5	8.23	0.01	-0.03	1.57	-0.01	-0.14	7.49	-0.03	-0.06	3.65	0.02	-0.07
6	3.88	0.01	-0.05	3.29	-0.07	-0.73	3.13	-0.01	-0.03	3.01	-0.04	-0.20
7	-0.43	0.03	0.06	4.14	-0.11	-1.10	0.42	0.14	0.39	2.18	-0.21	-1.26
8	1.42	0.00	-0.18	0.82	0.00	-0.16	0.09	0.01	0.00	0.75	-0.01	-0.04
9	3.59	-0.27	-0.50	-1.70	0.00	0.05	11.65	-0.01	-1.53	*	*	*
10	-0.12	0.10	0.17	7.24	-0.01	-0.28	-4.58	-0.11	0.01	*	*	*
11	0.19	0.00	0.00	3.04	-0.02	-0.34	-1.43	0.08	0.16	1.29	-0.10	-1.38
12	-3.48	0.00	0.07	3.36	-0.13	-0.82	*	*	*	-0.31	-0.02	0.12
Mean	2.20	-0.01	-0.09	4.00	-0.04	-0.52	3.50	-0.00	-0.16	4.22	-0.04	-0.37
SD	3.16	0.09	0.17	4.28	0.09	0.84	5.82	0.07	0.50	4.99	0.07	0.53

LA1=left anterior cerebral artery segment 1, RA1= right anterior cerebral artery segment 1, LPComA=left posterior communicating artery, RPComA=right posterior communicating artery, TAWSS=Calculated time averaged wall shear stress, OSI=oscillatory shear index and RRT=relative residence time.

\* Missing right posterior communicating artery in Cases 9 and 10 and missing left posterior communicating artery in case 12.