

Comparison of Computational Fluid Dynamics with Transcranial Doppler Ultrasound in Response to Physiological Stimuli – Online Resource 3

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Table 1 Paired t-test two tailed power analysis between distributions of CFD and TCD maximal velocity waveform characteristics (systolic, average and end diastolic).

	Rest	Hypercapnia	Exercise
Systolic Velocity			
d_{av}	1.63	1.45	3.30
Power (CFD vs TCD)	1.00	0.99	1.00
Average Velocity			
d_{av}	2.61	2.25	2.97
Power (CFD vs TCD)	1.00	1.00	1.00
End Diastolic Velocity			
d_{av}	3.25	2.57	3.06
Power (CFD vs TCD)	1.00	1.00	1.00

Effect size calculated as Cohen's d using average variance (d_{av}) with a paired sample count of n=12.

Table 2 Paired t-test two tailed power analysis of stimuli (hypercapnia or exercise) response distributions of CFD or TCD maximal velocity waveform characteristics (systolic, average and end diastolic) relative to the corresponding rest condition.

	Hypercapnia vs Rest	Exercise vs Rest
Systolic Velocity		
CFD Data Power d_{av}	1.05	0.43
CFD Data Power	0.91	0.28
TCD Data Power d_{av}	3.13	3.66
TCD Data Power	1.00	1.00
Average Velocity		
CFD Data Power d_{av}	1.45	0.74
CFD Data Power	1.00	0.65
TCD Data Power d_{av}	3.75	3.73
TCD Data Power	1.00	1.00
End Diastolic Velocity		
CFD Data Power d_{av}	1.90	0.59
CFD Data Power	1.00	0.46
TCD Data Power d_{av}	3.85	3.67
TCD Data Power	1.00	1.00

Effect size calculated as Cohen's d using average variance (d_{av}) with a paired sample count of n=12.

Table 3 Paired t-test two tailed power analysis between relative change distributions of CFD and TCD maximal velocity waveform characteristics (systolic, average and end diastolic) from rest to hypercapnia and rest to exercise.

		Rest → Hypercapnia	Rest → Exercise
Systolic Velocity			
	d_{av}	0.23	1.26
	Power (CFD vs TCD)	0.11	0.98
Average Velocity			
	d_{av}	0.26	0.41
	Power (CFD vs TCD)	0.13	0.26
End Diastolic Velocity			
	d_{av}	0.30	0.24
	Power (CFD vs TCD)	0.16	0.12

Effect size calculated as Cohen's d using average variance (d_{av}) with a paired sample count of n=12.