

Comparison of Airway Pressures and Expired Gas Washout for Nasal High Flow versus CPAP in Child Airway Replicas

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Additional Material: Tabulated Statistical Results

1). Comparison of Average Tracheal Pressures between CPAP (5cmH₂O and 10cmH₂O) and NHF (Optiflow Junior 2 at 20 L/min)

Average PEEP (CPAP vs NHF; n = 10)		
ANOVA		
P-Value	0.0000000355	
Post Hoc		
Pairs		P-Value
CPAP (5cmH2O)	CPAP (10cmH2O)	0.0000000132
CPAP (5cmH2O)	NHF (20 L/min)	0.938
CPAP (10cmH2O)	NHF (20 L/min)	0.000172

Average PPeak (CPAP vs NHF; n = 10)		
ANOVA		
P-Value	0.00000650	
Post Hoc		
Pairs		P-Value
CPAP (5cmH2O)	CPAP (10cmH2O)	0.0000000132
CPAP (5cmH2O)	NHF (20 L/min)	0.0357
CPAP (10cmH2O)	NHF (20 L/min)	0.0521

Average Pmin (CPAP vs NHF; n = 10)		
ANOVA		
P-Value	0.00000000000000655	
Post Hoc		
Pairs	P-Value	
CPAP (5cmH2O)	CPAP (10cmH2O)	0.0000000132
CPAP (5cmH2O)	NHF (20 L/min)	0.000386
CPAP (10cmH2O)	NHF (20 L/min)	0.0000000715

Average PInsp (CPAP vs NHF; n = 10)		
ANOVA		
P-Value	0.000000000000936	
Post Hoc		
Pairs	P-Value	
CPAP (5cmH2O)	CPAP (10cmH2O)	0.0000000132
CPAP (5cmH2O)	NHF (20 L/min)	0.0239
CPAP (10cmH2O)	NHF (20 L/min)	0.000000974

2). Comparison of Average EtCO₂ between CPAP (Sealed Mask, 5cmH₂O, and 10cmH₂O) and NHF (Optiflow Junior 2 at 20 L/min)

Average EtCO2 (CPAP vs NHF; n = 10)		
ANOVA		
P-Value	0.0000000000000221	
Post Hoc		
Pairs	P-Value	
CPAP (Sealed Mask)	CPAP (5cmH2O)	0.984
CPAP (Sealed Mask)	CPAP (10cmH2O)	0.0371
CPAP (Sealed Mask)	NHF (20 L/min)	0.00000129
CPAP (5cmH2O)	CPAP (10cmH2O)	0.000273
CPAP (5cmH2O)	NHF (20 L/min)	0.00000149
CPAP (10cmH2O)	NHF (20 L/min)	0.0000880

3). Comparison of Average Tracheal Pressures between NHF interfaces (Optiflow 3S, Optiflow +, and Optiflow Junior 2) at 20 L/min

Average PEEP (NHF; n = 5)		
ANOVA		
P-Value	0.0811	
Post Hoc		
	Pairs	P-Value
Optiflow 3S	Optiflow +	0.241
Optiflow 3S	Optiflow Junior 2	0.156
Optiflow +	Optiflow Junior 2	0.578

Average PPeak (NHF; n = 5)		
ANOVA		
P-Value	0.0857	
Post Hoc		
	Pairs	P-Value
Optiflow 3S	Optiflow +	0.0905
Optiflow 3S	Optiflow Junior 2	0.19
Optiflow +	Optiflow Junior 2	0.958

Average Pmin (NHF; n = 5)		
ANOVA		
P-Value	0.0796	
Post Hoc		
	Pairs	P-Value
Optiflow 3S	Optiflow +	0.969
Optiflow 3S	Optiflow Junior 2	0.187
Optiflow +	Optiflow Junior 2	0.276

Average P _{insp} (NHF; n = 5)		
ANOVA		
P-Value	0.0805	
Post Hoc		
	Pairs	P-Value
Optiflow 3S	Optiflow +	0.591
Optiflow 3S	Optiflow Junior 2	0.158
Optiflow +	Optiflow Junior 2	0.341

4). Comparison of Average EtCO₂ between NHF interfaces (Optiflow 3S, Optiflow +, and Optiflow Junior 2) at 20 L/min

Average EtCO2 (NHF; n = 5)		
ANOVA		
P-Value	0.0685	
Post Hoc		
Pairs		P-Value
Optiflow 3S	Optiflow +	0.194
Optiflow 3S	Optiflow Junior 2	0.107
Optiflow +	Optiflow Junior 2	0.495