

**Supplemental Material S2.** Subgroup regression analyses: NZSS score outcomes - physiological measures across diagnostic groups and acuity (ICU, intubation, tracheostomy).

**NZSS score outcomes – physiological measures by diagnostic groups**  
*p\*\* significant ( $p < .05$ ) correlations shown*

Physiological Measures	Outcome	Diagnosis	B (95% CI)	p
Urge to clear	NZSS total	Neuro	0.04 (-0.14, 0.21)	.688
Urge to clear	NZSS total	Structural	0.11 (-0.18, 0.39)	.458
Urge to clear	NZSS total	Critical/ICU	0.17 (-0.10, 0.45)	.208
Urge to clear	NZSS total	Other	0.11 (-0.21, 0.43)	.490
Peak expiratory force	NZSS total	Neuro	-0.07 (-0.29, 0.15)	.550
Peak expiratory force	NZSS total	Structural	-0.17 (-0.58, 0.25)	.419
Peak expiratory force	NZSS total	Critical/ICU	-0.36 (-0.89, 0.17)	.179
Peak expiratory force	NZSS total	Other	0.17 (-0.32, 0.66)	.493
Swallow/min	NZSS total	Neuro	-1.14 (-2.44, 0.16)	.086
Swallow/min	NZSS total	Structural	-2.69 (-4.63, -0.75)	<b>.007</b>
Swallow/min	NZSS total	Critical/ICU	-0.02 (-1.83, 1.78)	.979
Swallow/min	NZSS total	Other	-1.45 (-3.24, 0.34)	.108
Laryngeal adductor reflex	NZSS total	Neuro	-1.01 (-2.09, 0.07)	.067
Laryngeal adductor reflex	NZSS total	Structural	-1.45 (-2.89, -0.01)	.048
Laryngeal adductor reflex	NZSS total	Critical/ICU	-0.65 (-2.13, 0.82)	.374
Laryngeal adductor reflex	NZSS total	Other	-1.71 (-3.81, 0.38)	.104
Pharyngeal squeeze	NZSS total	Neuro	-1.65 (-2.60, -0.71)	<b>.001</b>
Pharyngeal squeeze	NZSS total	Structural	-0.95 (-2.50, 0.60)	.224
Pharyngeal squeeze	NZSS total	Critical/ICU	-1.59 (-3.02, -0.16)	.030
Pharyngeal squeeze	NZSS total	Other	-1.95 (-3.44, -0.46)	.012
Vocal fold paralysis	NZSS total	Neuro	0.89 (-0.06, 1.83)	.066
Vocal fold paralysis	NZSS total	Structural	1.69 (0.42, 2.97)	<b>.010</b>
Vocal fold paralysis	NZSS total	Critical/ICU	1.14 (-0.46, 2.75)	.159
Vocal fold paralysis	NZSS total	Other	1.00 (-0.77, 2.77)	.260

## NZSS score outcomes – physiological measures by ICU admission

*p\*\* significant ( $p < .05$ ) correlations shown*

Physiological Measures	Outcome	ICU admission	B (95%CI)	p	rho	P**
Urge to clear	NZSS total	No	0.01 (-0.16, 0.19)	.887		
Urge to clear	NZSS total	Yes	0.16 (0.00, 0.33)	.047		
Peak expiratory force	NZSS total	No	-0.13 (-0.34, 0.08)	.223		
Peak expiratory force	NZSS total	Yes	-0.10 (-0.37, 0.16)	.441		
Swallow/min	NZSS total	No	-0.68 (-1.72, 0.36)	.197		
Swallow/min	NZSS total	Yes	-1.77 (-2.99, -0.54)	.005	-.342	< .001
Laryngeal adductor reflex	NZSS total	No	-1.17 (-2.26, -0.09)	.034		
Laryngeal adductor reflex	NZSS total	Yes	-1.05 (-1.95, -0.16)	.022	-.219	.018
Pharyngeal squeeze	NZSS total	No	-1.83 (-2.71, -0.96)	< .001	-.404	< .001
Pharyngeal squeeze	NZSS total	Yes	-1.17 (-2.04, -0.30)	.009	-.250	.006
Vocal fold paralysis	NZSS total	No	1.08 (0.14, 2.02)	.025	.210	.028
Vocal fold paralysis	NZSS total	Yes	1.18 (0.33, 2.02)	.007	.233	.006

## NZSS score outcomes – physiological measures by Intubation

*p\*\* significant (p < .05) correlations shown*

Physiological Measures	Outcome	Intubation	B (95%CI)	p	rho	P**
Urge to clear	NZSS total	No	0.02 (-0.14, 0.18)	.815		
Urge to clear	NZSS total	Yes	0.15 (-0.03, 0.32)	.096		
Peak expiratory force	NZSS total	No	-0.10 (-0.30, 0.10)	.316		
Peak expiratory force	NZSS total	Yes	-0.11 (-0.39, 0.17)	.450		
Swallow/min	NZSS total	No	-0.73 (-1.74, 0.29)	.160		
Swallow/min	NZSS total	Yes	-1.75 (-2.99, -0.51)	.006	-.338	< .001
Laryngeal adductor reflex	NZSS total	No	-1.18 (-2.20, -0.15)	.025	-.210	.042
Laryngeal adductor reflex	NZSS total	Yes	-1.02 (-1.94, -0.10)	.031	-.216	.022
Pharyngeal squeeze	NZSS total	No	-1.84 (-2.65, -1.02)	< .001	-.406	< .001
Pharyngeal squeeze	NZSS total	Yes	-1.07 (-1.99, -0.14)	.024	-.227	.017
Vocal fold paralysis	NZSS total	No	1.08 (0.19, 1.97)	.018	.216	.019
Vocal fold paralysis	NZSS total	Yes	1.16 (0.29, 2.04)	.010	.227	.009

## NZSS score outcomes – physiological measures by Prior tracheostomy.

*p\*\* significant (p < .05) correlations shown*

Physiological Measures	Outcome	Prior tracheotomy	B (95%CI)	p	rho	P**
Urge to clear	NZSS total	No	0.03 (-0.10, 0.16)	.674		
Urge to clear	NZSS total	Yes	0.33 (0.05, 0.61)	.024		
Peak expiratory force	NZSS total	No	-0.04 (-0.21, 0.14)	.684		
Peak expiratory force	NZSS total	Yes	-0.55 (-1.09, 0.00)	.048	-.332	<b>.044</b>
Swallow/min	NZSS total	No	-0.81 (-1.66, 0.03)	.060	-.215	<b>.003</b>
Swallow/min	NZSS total	Yes	-3.70 (-5.88, -1.52)	.001	-.473	<b>&lt; .001</b>
Laryngeal adductor reflex	NZSS total	No	-1.32 (-2.04, -0.59)	< .001	-.265	<b>&lt; .001</b>
Laryngeal adductor reflex	NZSS total	Yes	-1.03 (-2.76, 0.71)	.238		
Pharyngeal squeeze	NZSS total	No	-1.46 (-2.14, -0.79)	< .001	-.316	<b>&lt; .001</b>
Pharyngeal squeeze	NZSS total	Yes	-1.78 (-3.39, -0.17)	.031	-.344	<b>.019</b>
Vocal fold paralysis	NZSS total	No	1.13 (0.46, 1.81)	.001	.231	<b>.001</b>
Vocal fold paralysis	NZSS total	Yes	1.36 (-0.20, 2.92)	.087		