Abstract 103 Table 1 Vital capacity of athletes, singers and non athlete non singers

	Group A		Group Non AS		p value	Group S		Group Non AS		p value
	Mean	±SD	Mean	±SD		Mean	±SD	Mean	±SD	
Vital Capacity(ml)	3452.5	696.7	2625	543.74	0.0002*	3015	346.83	2625	543.74	0.01*

Abstract 103 Table 2 Univariate linear regression for factors affecting vital capacity

	Unstandardized Coefficients		P value	95% Confidence interval for B	
	B	Std. Error		Lower Bound	Upper Bound
Age (yrs)	205.000	174.025	.244	−143.349	553.349
Height	36.450	16.800	.034	2.821	70.079
Weight	−16.297	13.464	.231	−43.248	10.654
Overweight	−245.833	166.344	.145	−578.807	87.140
Group					
Non AS					
Athletes	827.500	197.617	**.0002**	427.446	1227.554
Singers	195.000	72.106	.010	49.028	340.972
Sex					
Female					
Male	331.667	160.210	.043	10.972	652.361

athletes and singers were also significantly different. Non-athletes non-singers had a significantly higher body mass index (23.87±2.35 kg/m2) as compared to athletes (20.66±1.52 kg/m2) and singers (22.6±1.84 kg/m2). Univariate linear regression demonstrated that male gender and height significantly affected lung capacity.

Conclusions In conclusion, encouraging regular exercise and singing in children improve vital capacity. Children are most susceptible to the harmful effects of air pollution. Opting for a healthy lifestyle may be an effective strategy to deal with the menace of air pollution.

104 MONITORING ENDOTRACHEAL TUBE CUFF PRESSURES IN PAEDIATRIC CRITICAL CARE – ARE DANGEROUSLY HIGH PRESSURES GOING UNDETECTED?

Rory Sweeney, Brendan Kelly, Christopher Flannigan. *UK*

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Background The use of cuffed endotracheal tubes (ETTs) in paediatric critical care has become widespread with the development of high volume – low pressure cuffs which require significantly lower sealing pressure than traditional ETTS. There remains a risk of over inflation which can impair tracheal capillary perfusion causing pressure necrosis of the surrounding fragile epithelium potentially resulting in permanent upper airway damage such as sub-glottic stenosis. Cuff pressure can vary over time therefore careful monitoring is vital to ensure the pressure remains within a safe range.

Objectives Connecting a manometer to the pilot balloon is one method to monitor cuff pressure. A prior study demonstrated that connecting a manometer caused a drop in pressure giving a falsely low readings. We hypothesised that pre-pressuring the manometer would result in accurate cuff pressure readings enabling detection of dangerously high pressures.

Methods An airway model was intubated with Halyard size 3.0 micro-cuff ETT. Using a commercially available manometer, a three way tap and syringe the cuff was inflated to a set pressure in increments of 1 cm H2O between 0 and 40 cm H2O. The manometer was then connected to the pilot balloon to check the pressure using 3 methods:

Control 1) Manometer connected directly to the pilot balloon (no tubing used therefore pressure in the system = 0 cm H2O)

Control 2) Manometer connected to the pilot balloon via extension tubing with 3 way tap and syringe in circuit (pressure in tubing and manometer system = 0 cm H2O)

Test 3) Manometer connected to the pilot balloon via extension cable with 3 way tap and syringe in circuit with the entire circuit pre-pressurised to 20 cmH2O before connecting

Set-up 2) was used as a control to show how the tubing and 3 way tap affected the readings. For each method three measurements were performed at every 1 cm H2O increment and the average reading was taken.

Results Using method 1 the average manometer reading was significantly lower than the pre-set cuff pressure for example pre-set pressures of 20 & 40 cm H2O read only 5.3 and 8 cm H2O respectively. Using method 2 the average readings dropped even further from the pre-set pressure. Using method 3 with the manometer pre-pressurised to 20 cm H2O the reading dropped if the cuff pressure was ≤19 cm H2O and increased if the cuff pressure was ≥21 cm H2O. A pre-set pressure of 0 gave a reading of 11 cm H2O, 10 read as 17.7 cm H2O, 30 read as 20 cm H2O and 40 read as 21.3 cm H2O.

Conclusions The results indicate that the intervention of connecting a manometer renders the reading inaccurate. This disparity is due to the dead space in the manometer and also the tubing as shown by the lower readings from method 2. The hypothesis of filling the dead space by pre-pressurising the manometer system did not result in more accurate readings as the pressure merely equalised across the system. Therefore the only way to ensure cuff pressures are not dangerously high is to deflate the cuff and use the 3-way tap system or cuff inflator to inflate to a safe pressure.

108 ACTIONABLE PHARMACOGENETIC VARIANTS IN HONG KONG CHINESE EXOME DATA AND PROJECTED PRESCRIPTION IMPACT IN THE HONG KONG POPULATION LEADING TO PRECISION MEDICINE

Mullin Yu, Brian Chung, Marcus Chan, Kit San Yeung, Clara Tang, Claudia Chung. *Hong Kong*

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Background Pharmacogenetics is the study of variability in drug response caused by genetic variations. It is estimated that