Our Editor's Choice paper relates to the performance of commercial and non-commercial endotracheal tube securing devices. Fisher and colleagues evaluated 16 endotracheal tube holders in simulated clinical conditions. They found that non-commercial devices exert less force onto the patient's face than commercial devices. Many of the commercial holders allow for a rapid, but secure, movement of the artificial airway from one side of the mouth to the other. Hernandez and Shaw suggest that surgical patient populations might benefit from receiving commercial devices, in which there are greater associated shear forces on the skin but better mobility, whereas patients remaining on the ventilator might be changed to devices and techniques associated with less shear force but less mobility as they approach candidacy for tracheostomy.

The spontaneous breathing trial (SBT) is important to determine when a patient is ready for ventilator liberation. Figueroa-Casas et al measured the inter-observer agreement between respiratory therapists of the SBT outcome. Within a respiratory therapist-driven protocol they found nearly 90% inter-observer agreement in the interpretation of SBT outcomes. As pointed out by Daoud, further clarity of the definitions and training might improve clinicians' agreement regarding the SBT, but it is unlikely that the art and science related to ventilator liberation will lead to a perfect agreement between clinicians.

The aims of the study by Khirani et al were to analyze the practice of mouthpiece ventilation and to evaluate the performance of ventilators for this therapy. Subjects were overall satisfied with mouthpiece ventilation. Alarms were common with home ventilators, although less common in those with mouthpiece ventilation software. Mouthpieces can be useful to provide adjunct daytime ventilation in patients with neuromuscular disease. But, as stated by Czell, during sleep most patients require the use of a mask.

The study by Tulaimat et al describes the association between the rating of the severity of respiratory distress and vital signs, severity of illness, use of mechanical ventilation, and death. Interestingly, a physician's rating of respiratory distress was independently predictive of intubation within 72 hours. Vital signs explained only a small proportion of the distress variance; the other observations contributing to a physician's rating of respiratory distress require further study.

Esophageal and gastric balloon catheters are used to assess respiratory muscle function, lung mechanics, and chest wall mechanics. Walterspacher and colleagues assessed the mechanical characteristics of balloon catheters in a bench study. Reliability of pressure measurements and estimation of lung model compliance in the tested catheters were high. Filling volume is critical for precise pressure measurement and compliance estimation. At first use, adhesion of the balloon material might prevent reliable pressure measurement.

The Cystic Fibrosis (CF) Foundation recently deemed the use of extended-interval dosing (EID) of aminoglycosides acceptable for the treatment of CF-related pulmonary exacerbations. Prescott conducted a survey of extended-interval aminoglycoside dosing practices in adult CF programs in the United States. The results suggest that use of EID of aminoglycosides across programs is now the most common method for dosing aminoglycosides in adults with CF.

Moon and Chun evaluated the utility of red blood cell (RBC) acetylcholinesterase in mechanically ventilated subjects after organophosphate poisoning. They found that RBC acetylcholinesterase activity within 24 h of presentation might help predict the duration of mechanical ventilation in this population. However, RBC acetylcholinesterase activity may not be a suitable parameter for predicting a patient's readiness for ventilator liberation.

Kanburoglu et al conducted a cross-sectional prospective study to determine reference values of the 6MWT test in children and adolescents between 12 and 18 years of age. They found that the 6MWD does not increase in a linear fashion from the age of 12 y until adulthood. Because correlation of the 6MWD with anthropometric features is very weak, the standard curves should be used.

Using a small device to detect oxygen flow and breathing frequency, van Zeller and colleagues evaluated subjects' adherence to liquid oxygen therapy as compared with adherence diaries and self-reported perception of use. They found that subjects overestimated adherence to therapy compared to an adherence diary or objective adherence monitoring. However, no significant difference was found comparing the diary and the device, so either can be helpful in clinical practice.

The aim of the systematic review and meta-analysis by Neves et al was to review the effects of expiratory muscle training (EMT) and EMT plus inspiratory muscle training (IMT), compared to control, in subjects with COPD. They found that EMT and EMT plus IMT improved respiratory muscle strength and can be used as part of treatment during pulmonary rehabilitation for severe to very severe patients with COPD.

Storre and colleagues evaluated high-intensity versus target-volume noninvasive ventilation (NIV) in subjects with COPD. High intensity NIV is an approach championed by the authors to normalize gas exchange in subjects with COPD. In this study, they found that switching subjects from well-established high-intensity NIV to target-volume NIV showed no clinical benefits in chronic hypercapnic COPD. Nevertheless, target-volume NIV might offer some physiological advantages for breathing pattern and might be beneficial in some individual subjects.

The purpose of the study by Melo and colleagues was to evaluate the immediate effect of chest physiotherapy on hemodynamic, metabolic, inflammatory and oxidative stress parameters in subjects in septic shock. They found that chest physiotherapy has immediate effects of improving oxygenation, reducing lactate and oxidative damage in subjects in septic shock. However, it does not cause alterations in the inflammatory and hemodynamic parameters.

Iwona et al evaluated the relationship of exhaled nitric oxide and pre-bronchodilator FEV_1 and the change in FEV_1 after bronchodilator in children with asthma. These results suggest a need to measure FeNO before as well as after spirometry. In children with asthma and bronchial obstruction, the authors also suggest assessing FeNO after short-acting $ß_2$-agonists.

Polydatin (PD) has anti-inflammatory and anti-apoptotic effects in ischemic-reperfusion injury. Chen et al investigated the protective effect of PD against burn-induced lung injury in rats. They found that PD ameliorates burn-induced lung injury via its anti-inflammatory and anti-apoptotic effects. PD treatment might serve as a potential therapeutic target for the treatment of critical burn injuries.

The aim of the experimental study by Chiang and colleagues was to investigate the mechanisms of distal organ injury caused by ventilator-induced lung injury (VILI). VILI was induced in rat lungs with high tidal volume (V_T) ventilation. They found that high V_T induces VILI and is associated with inflammation and apoptosis in distal organs. Kidney tissue appears to be more vulnerable than heart and liver tissue following VILI.

The effect of bronchoalveolar lavage (BAL) on refractory mycoplasma pneumoniae pneumonia in children was evaluated by Chen et al. BAL appeared to be efficacious and well-tolerated treatment in the setting of radiologically confirmed large pulmonary lesion.