

rib separation remaining after retractor withdrawal, required an average of 15 pounds to correct, *i.e.*, to restore the preoperative intercostal width. In the posterolateral thoracotomy incision, there appears to be very little relation between the amount of force exerted by the thoracic retractor and the degree of the post-thoracotomy pain noted during the patients' postoperative hospital course. (*Sharp, W. V., and others: Compliance of the Thoracic Wall During Thoracotomy, J. Thor. Cardio. Surg. 45: 713 (June) 1963.*)

**POSITIVE PRESSURE BREATHING** Intrathoracic pressure during intermittent positive pressure breathing (IPPB) in conscious subjects varied widely at identical mask pressures depending on the degree of relaxation, remaining positive in the completely relaxed subject during inspiration. In normal subjects dynamic pulmonary compliance varied inversely with flow rate, which may account for the disparity in results observed in relaxed anesthetized subjects studied by various investigators. In patients with obstructive disease, decrease of dynamic compliance with flow rate was of similar magnitude to that occurring during unassisted breathing. Tidal volume varied inversely with flow rate. In the completely relaxed subject, the work of breathing during inspiration approached zero and a considerable portion of the active expiratory work was eliminated even in the patient with obstructive disease. (*Ayres, S. M., and others: Effects of Intermittent Positive Pressure Breathing on Intrathoracic Pressure, Pulmonary Mechanics and the Work of Breathing, Amer. Rev. Resp. Dis. 87: 370 (Mar.) 1963.*)

**TRACHEOBRONCHIAL CLEARANCE** Large carbon particles labeled with  $^{131}\text{I}$  and delivered to the tracheobronchial tree of unanesthetized humans are cleared faster in normal subjects than in those with chronic lung disease. Cough accelerates clearance in both groups, but the effect is much more marked in normal subjects. (*Toigo, A., and others: Clearance of Large Carbon Particles from the Human Tracheobronchial Tree, Amer. Rev. Resp. Dis. 87: 487 (Apr.) 1963.*)

**RESPIRATORY STIMULANTS** Effects of three centrally acting respiratory stimulants (prothecamide, ethamivan and doxapram) have been studied in patients with moderate to severe pulmonary disability with hypoxemia and hypercapnia secondary to chronic obstructive emphysema and related disorders. When given in an intravenous drip in moderate dosage these drugs were shown to cause a mild decrease in arterial carbon dioxide tension. Ethamivan and doxapram were given with oxygen and found able to increase ventilation even when the hypoxemic drive was abolished. It is not recommended that these drugs be used instead of respirators in comatose patients or patients exhausted by the labor of breathing nor should they be used without bronchodilators and other drugs which can help reduce the work of breathing. (*Carter, H. G.: Comparative Study of Three Respiratory Stimulants in Chronic Obstructive Emphysema, Amer. Rev. Resp. Dis. 87: 830 (June) 1963.*)

**TRACHEAL SIZE** Volume changes of a tracheal length isolated in the neck with nerve and blood supply intact, was measured in anesthetized dogs. Inflation of the lungs increased tracheal volume in each of 10 spontaneously breathing dogs and in each of 8 anesthetized, paralyzed and artificially ventilated dogs. The degree of dilatation varied with the inflation volume and the resting tone of the tracheal muscle. Following pulmonary denervation, inflation of the lungs no longer resulted in tracheal dilatation in 4 spontaneously breathing and 4 artificially ventilated dogs. In the spontaneously breathing dogs, the Hering-Breuer inflation reflex also disappeared. Cooling the cervical vagi to temperatures between 7 and 12° C. prevented tracheal dilatation during lung inflation in each of 19 studies on 5 dogs. It also blocked the Hering-Breuer inflation reflex. Inflation of the lungs dilates the upper airway reflexly with the afferent pathway in the vagus nerves and the responsible stretch receptors are those which mediate the Hering-Breuer inflation reflex. (*Nadel, J. A., and Widdicombe, J. G.: Effect of Lung Inflation on Tracheal Calibre in Dogs, J. Physiol. 166: 19P (Apr.) 1963.*)