

younger subjects. Changes in pulmonary dynamics with advancing age are more likely due to changes in the compliance or muscle power of the thorax rather than to changes in the pressure volume characteristics of the lungs themselves. (Permutt, S., and Martin, H.: *Static Pressure-volume Characteristics of Lungs in Normal Males*, *J. Appl. Physiol.* 15: 819 (Sept.) 1960.)

UNILATERAL HYPOXIA When the dependent lung was allowed to breathe 10 per cent oxygen and the upper lung breathed air during spontaneous ventilation in the lateral position no shift of blood from the hypoxic lung to the air-breathing lung occurred. This is in contrast to an identical study done with the subjects supine where there was a significant shift of blood from the hypoxic lung to the air-breathing lung. The hemodynamic changes caused by unilateral hypoxia were probably not sufficient magnitude to overcome hydrostatic and other factors governing the relative distribution of blood between the lungs in the lateral position. (Aborelius, M., and others: *Influence of Unilateral Hypoxia on Blood Flow Through Lungs in Man in Lateral Position*, *J. Appl. Physiol.* 15: 595 (July) 1960.)

NEGATIVE PRESSURE BREATHING

The application of continuous negative pressure of - 10 to - 30 cm. of water to the airway during spontaneous respiration caused a decrease in functional residual capacity. Residual volume remained unchanged, but the expiratory reserve volume decreased to 44 per cent of control value with - 10 cm. of water and to 12.5 per cent of control with - 30 cm. of water. Resistance to air flow increased, probably due to narrowing of the conducting passages at the small resting lung volumes achieved. Engorgement of bronchial vessels may have contributed to increased resistance. The compliance of the lung was not altered by the application of continuous negative pressure. (Ting, E. Y., Hong, S. K., and Rahn, H.: *Lung Volumes, Lung Compliance, and Airway Resistance during Negative Pressure Breathing*, *J. Appl. Physiol.* 15: 554 (July) 1960.)

INTRAPULMONARY MIXING Intermittent positive pressure breathing does not improve the over-all efficiency of ventilation as measured by Becklake's lung clearance index in normal subjects and only to a small degree in emphysematous patients. A voluntary increase in tidal volume comparable to that produced by intermittent positive pressure breathing affected the changes in the over-all efficiency of ventilation in all normal patients and in those emphysematous patients who could do so. The beneficial effects of intermittent positive pressure breathing on the intrapulmonary mixing of gases are due to the increase in tidal volume obtained and are of particular value in those patients who are unable to maintain an effective tidal volume or to increase it. (Torres, G., Lyons, H. A., and Emerson, P.: *Effects of Intermittent Positive Pressure Breathing on Intrapulmonary Distribution of Inspired Air*, *Amer. J. Med.* 29: 946 (Dec.) 1960.)

POSTOPERATIVE ATELECTASIS The effect of positive pressure breathing and nebulization of bronchodilators and detergents on the incidence of postoperative atelectasis has been studied in 100 consecutive patients undergoing upper abdominal surgery with endotracheal cyclopropane anesthesia with succinylcholine supplement. Alternate patients were treated with intermittent positive pressure on inspiration with oxygen and nebulization of 0.25 ml. of Isuprel in 1 to 200 dilution with 2 ml. of Alevaire. The presence or absence of atelectasis was determined solely by chest roentgenograms. In the 50 patients receiving inhalational therapy, plate-like atelectasis developed in 14, segmental atelectasis in 10, and lobar atelectasis in one. In the 50 patients not given inhalational therapy, plate-like atelectasis developed in 20, segmental atelectasis in 4, and lobar atelectasis in 2. There was no apparent advantage of intermittent positive pressure breathing in prophylaxis against postoperative atelectasis. The patients treated with routine postoperative management of early ambulation, frequent change of position, coughing, and deep breathing did as well as the specially treated group. (Becker, A., and others: *Treatment of Postoperative Pulmonary Atelectasis*