ticles in the respiratory tree also markedly affect retention. (*Mitchell, R. I.: Retention of Aerosol Particles in Respiratory Tract: Review, Amer. Rev. Resp. Dis. 82: 627 (Nov.) 1960.*)

DIFFUSING CAPACITY OF LUNG The breath holding diffusing capacity and breath holding lung volume of patients two months after thoracic surgery were decreased proportionally in patients who underwent pneumonectomy while in patients who underwent lobectomy, wedge resection or thoracoplasty there was a greater degree of depression of diffusing capacity with subsequent return toward normal. Probably there would have been an even more disproportionate decrease immediately after operation. This disproportionate functional change is correlated with trauma to the remaining lung during surgery and is due either to altered hemodynamics or to acute changes in the alveolar capillary membrane in the traumatized lung. Similar changes with decreases in diffusing capacity of up to 50 per cent may follow open heart surgery. (*Dietiker, F., Lester, W., and Burrows, B.: Effects of Thoracic Surgery on Pulmonary Diffusing Capacity, Amer. Rev. Resp. Dis. 81: 830 (June) 1960.*)

HELIUM THERAPY Ten patients with severe emphysema while breathing a mixture of 80 per cent helium and 20 per cent oxygen showed a 20 per cent decrease in pulmonary resistance of the value obtained with air. There were no significant decreases in static or dynamic compliance of the lungs, functional residual capacity or static transpulmonary pressures. Though no measures of arterial carbon dioxide tension, oxygen consumption or carbon dioxide production were done, the change in resistance alone is therapeutically significant for short term therapy of such patients. (*Grapé, B., Channin, E., and Tyler, J. H.: Effect of Helium and Oxygen Mixtures on Pulmonary Resistances in Emphysema, Amer. Rev. Resp. Dis. 81: 823 (June) 1960.*)

ALVEOLAR RECRUITMENT The deflation pressure volume curve is different from the inflation pressure volume curve since the former represents only the elastic behavior of the elements which were inflated up to a given pressure or volume while the latter represents the elastic behaviour plus the added pressure necessary to open additional alveoli which have closed. The lung has different populations of alveoli which are recruited at different opening pressures. Thus an increase in inflation produces changes in the shape of the pressure volume curve which are eliminated in the next reinflation to the same point in a subsequent immediate reinflation and subsequent serial reinflations. The extent of alveolar closures during tidal respiration between two large volume inflations depends primarily on the number of tidal inflations rather than the length of the interval. The liability of an alveolus to closure probably depends on its compliance and the conductance of its associated airway. (*Bernstein, L.: Indications of Quantal Behaviour in Inflation and Deflation of Rabbit Lungs, Amer. Rev. Resp. Dis. 81: 744 (May) 1960.*)

SURFACE TENSION OF LUNG A mucoprotein film, probably monomolecular, covers the inner surface of the lung and can lower surface tension below 10 dynes/cm. In effect it increases the coefficient of elasticity of the surface and stabilizes the alveolar structure. The film can be removed and since it reforms at finite speed the minimal volume can be varied experimentally to between 5–50 per cent of the total lung volume. Modifications of this film, lowering surface tension in the alveolar structure or raising surface tension in the distal air passages, may be an important mechanism in the production of air trapping. (*Clements, J. A.: Effects of Intrinsic Surface Active Material on Mechanical Properties of Lungs, with Special Reference to Stability of Alveolar Structure, Amer. Rev. Resp. Dis. 81: 742 (May) 1960.*)

PULMONARY FUNCTION Studies of static pressure-volume characteristics of lungs in normal males indicated a decreasing vital capacity and an increasing residual volume but no change in the slope or position of the pressure-volume curve with advancing age. Older subjects were not able to change transpulmonary pressure between residual volume and total lung volume to the same extent as