BRIEFS FROM THE LITERATURE

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Briefs were submitted by Drs. John Adriani, Lee S. Binder, M. T. Clarke, J. E. Eckenhoff, Martin Helrich, J. R. Householder, J. J. Jacoby, S. J. Martin, E. J. Nelson, R. E. Ponath, William Rabenn, Alan D. Randall, R. W. Ridley, and H. S. Rottenstein. Briefs appearing elsewhere in this issue are a part of this column.

PRESSURE BREATHING Alterations in cardiac output, central blood volume, and arterial and central venous pressures were studied in 36 young men subjected to continuous negative or continuous positive pressure breathing. Negative pressure breathing increased cardiac output, stroke volume, and, to a lesser extent, central blood volume. Positive pressure, without overbreathing, decreased both cardiac output and central blood volume, but hyperventilation reversed these effects. On the basis of these observations, it is concluded that decreased intrathoracic pressure is important in maintaining or increasing the blood available to the heart in man, particularly during circulatory stress. (*Kilburn, K. H., and Sieker, H. O.: Hemodynamic Effects of Continuous Positive and Negative Pressure Breathing in Normal Man, Circulat. Res. 8: 660 (May) 1960.*)

WORK OF BREATHING At the maximal values of ventilation attained during exercise, the mechanical work of breathing amounts to 100–120 calories per minute. The work of breathing is of relatively small magnitude and the energy cost of respiration represents no more than 3 per cent of the total energy consumed by the subject. (*Margaria, R., and others: Mechanical Work of Breathing During Muscular Exercise, J. Appl. Physiol. 15: 354 (May) 1960.*)

LUNG COMPLIANCE Pulmonary compliance decreases during total bypass with the pump-oxygenator. Probable causes are (a) regurgitation of blood from the bronchial arteries through connecting vessels, (b) injection of blood from the right ventricle to the pulmonary vascular bed at the beginning of the bypass, and (c) vascular stasis, and probable structural modification produced by it, and lack of ventilation with subsequent local anoxia. No relation was found between the grade of decrease in pulmonary compliance and time of perfusion. (*Gustavino, G. N., and others: Modification of Lung Compliance during Perfusion with Pump-Oxygenator (Experimental), Dis. Chest 38: 170 (Aug.) 1960.*)

OBESITY The lung compliance of the total respiratory system is .119 liter/cm. water in normal individuals, but was .052 liter/cm. water in obese subjects. The compliance of the lung in obese individuals was not different from that of the normals. The difference was found to be in the chest wall. In contrast to normal subjects, total respiratory compliance was markedly reduced by recumbency in obese individuals. (*Naimark, A., and Cherniak, R. M.: Compliance of Respiratory System and Its Components in Health and Obesity, J. Appl. Physiol. 15: 377 (May) 1960.*)

PULMONARY RESISTANCE Pulmonary resistance in poliomyelitis patients in the supine position is greater than in normal supine subjects. Gravity acting on the soft tissues of the oropharynx and larynx was hypothesized as a primary cause of this increased pulmonary resistance. (*Ferris, B. G., Jr., and Pollard, D. S.: Effect of Tracheostomy Tubes on Resistance to Breathing and Pulmonary Resistance in Patients with Poliomyelitis, N. Engl. J. Med. 21: 1048 (Nov.) 1960.*)