J. A.: Functional Distribution of Right and Left Stellate Innervation to the Ventricles, Circulation Res. 28: 416 (April) 1966.)

HEART RATE Cardiovascular dynamics were studied in 10 healthy humans during controlled heart rates up to 160 beats per minute. Measurements were made at rest and at exercise with each patient serving as his own control. In both states, the cardiac index, left ventricular work, and peripheral resistance were not significantly altered by changes in heart rate while stroke index and mean systolic ejection rate decreased linearly with heart rate. During exercise (as compared to rest at comparable heart rates), cardiac index, tension time index, left ventricular work, stroke index and mean systolic ejection rate all increased while peripheral resistance decreased. Myocardial oxygen consumption increased with heart rate in both rest and exercise states. (*Stein, E.: The Relation of Heart Rate to Cardiovascular Dynamics, Circulation 33: 925 (June) 1966.*)

BETA-ADRENERGIC BLOCK Beta-adrenergic blockade with propranolol in six normal subjects caused (a) a mean decrease in resting heart rate; (b) a mean decrease in resting supine cardiac output; (c) a mean reduction in exercise cardiac output and exercise pulse rate; (d) a decrease in the elevation of arterial systolic pressure produced by exercise; (e) an increase in exercise end-diastolic pressures in the left ventricle and in exercise pulmonary artery pressures; and (f) more rapid recovery of circulatory function after exercise. There was no consistent change in pulmonary vascular resistance during rest or exercise. Even though normal cardiac response to exercise seems to be dependent on intact beta-adrenergic receptors, the exercise loads chosen were completed just as easily after the blockade as before. (*Cumming, G. R., and Carr, W.: Hemodynamic Response to Exercise After Propranolol in Normal Subjects, Canad. J. Physiol. 44: 465 (May) 1966.*)

BETA ADRENERGIC BLOCKADE Inderal (propranolol) is the second compound which specifically antagonizes the effects of catecholamines on the beta adrenergic receptors of the heart. Pharmacologically, it is similar to pronethalol but is devoid of the latter drug's carcinogenic action in experimental animals. Inderal prevents the sinus and ventricular tachycardias associated with cyclopropane or halothane anesthesia in atropinized patients. It also prevents ventricular arrhythmias caused by the intravenous infusion of catecholamines into atropinized patients anesthetized with halothane. It blocks the vasomotor response to surgical stimuli in lightly anesthetized patients and may therefore be used to facilitate hemostasis by controlled hypotension in anesthetized patients. It may be dangerous to use Inderal in conjunction with ether or chloroform anesthesia. Metabolic acidosis, bronchial asthma and toxemic states are contraindications to its use in anesthetized patients. Administration of Inderal to non-atropinized patients anesthetized with halothane may cause vagal arrest of the heart. (*Johnstone, M.: Beta Adrenergic Blockade with Inderal (Propranolol) during Anesthesia, Der Anaesthesist (German) 15: 96 (March) 1966.*)

BETA BLOCKERS The effects of propranolol, a beta-adrenergic blocking agent, on the A-V node and its antagonism of the action of adrenalin and isoproterenol on the A-V node were studied in dogs. Vagal and sino-atrial effects were eliminated by vagotomy and by crushing the S-A node. Propranolol itself depressed the automatism of the A-V node by 10–40 per cent. It also antagonized the positive chronotropic actions of adrenalin and isoproterenol on the node. This effect was dose related and thought to be due to competitive inhibitation. Propranolol also antagonized the shortening of the refractory period produced by these catecholamines. Other effects of beta-adrenergic blockade, such as blocking the vasodilating effects of adrenalin and isoproterenol, were also noted. (*Kabela, E., and Mendez, R.: Action of Propranolol on the Atrio-Ventricular Node and on its Response to Adrenalin and Isoprenalin, Brit. J. Pharmacol. 26: 473 (Feb.) 1966.*)

BETA BLOCKADE Propranolol, when given intravenously to dogs anesthetized with pentobarbital, reduced myocardial blood flow