some patients (*Kimmey, J. R., and Siebecker, K. L.: to be published*). Lidocaine also increases the duration of apnea produced in dogs by succinylcholine (*DeKornfeld, T. J., and Steinhaus, J. E.: Anesth. & Analg. 38: 173, 1959*). In patients anesthetized with nitrous oxide and thiobarbiturates, the administration of lidocaine intravenously did not produce the depression of blood pressure noted when procaine was similarly given (*Kimmey, J. R., and Steinhaus, J. E.: Acta anaesthesiol. scandinav. 3: 9, 1959*). The technique of Jolly and Steinhaus (*J. Pharmacol. & Exper. Therap. 116: 273, 1956*), by which drugs can be administered to a limited portion of the brain through the vascular supply, was used in this study to demonstrate the effect of lidocaine on the central nervous system. Ligation of the basilar artery of the rabbit separates the circulation of the internal carotid and vertebral arteries, allowing the administration of drugs to centers of the brain above or below this level. (Convulsions occurred when cocaine was injected into the internal carotid artery, but severe depression of medullary centers resulted from injection into the vertebral artery. Lidocaine in doses of 0.125, 0.25, 0.5 and 1.0 mg./kg. of body weight were injected into the femoral vein, carotid artery and vertebral artery of rabbits so prepared. Injection into the carotid artery produced muscular movements or convulsions in most animals. Injection into the vertebral artery produced respiratory changes, and in 9 of the 25 rabbits apnea occurred. Circulatory changes were inconsistent and often delayed in onset, suggesting that they may have been due to direct action on the circulatory system rather than from central nervous system effect. These experiments have shown that lidocaine injected into the vertebral artery in rabbits can produce respiratory depression and apnea, presumably as the result of action upon medullary centers. Convulsive activity and muscle movements were also produced, most often when the drug was injected into the carotid artery.

Respiratory Effects of Phenazocine (NIH 7519, Prinadol) and Morphine. J. WELDON BELLVILLE, M.D., STANLEY L. WALLENSTEIN, M.S., RAYMOND W. HOUDE, M.D., AND WILLIAM S. HOWLAND, M.D. *Department of Anesthesiology, Memorial Center for Cancer and Allied Diseases and the Section of Experimental Anesthesia, Division of Experimental Surgery, Sloan-Kettering Institute, New York, New York.* The respiratory depressant effects of phenazocine and morphine were evaluated in 5 healthy male subjects. Respiratory depression was defined in terms of displacement of the alveolar ventilation-alveolar P_{CO_2} response curve (*Seed, J. C., et al.: Arch. internat. pharmacodyn. 116: 293, 1958*). A modification of the rebreathing method of Eckenhoff, Helrich, and Hege (*Anesthesiology 17: 66, 1956*) was employed, and the alveolar ventilation-P_{CO_2} response curve was obtained automatically with the aid of an analog computer (*Bellville, J. W., and Seed, J. C., Science 130: 1079, 1959*). Morphine sulfate was administered intramuscularly at the 5 and 10 mg. dose level (two subjects received 7 mg. instead of 5 mg.) and phenazocine was studied at the 1.5 and 3.0 mg. dose level. The mean displacements and doses are as follows: morphine 5.8 mg.–3.42 mm. Hg, morphine 10 mg.–5.87 mm. Hg, phenazocine 1.5 mg.–5.74 mm. Hg, phenazocine 3.0 mg.–8.97 mm. Hg. From these data phenazocine was estimated to be 6.4 times as potent as morphine in terms of their effects on respiration.

Effect of Vanillic Diethylamid (Vandid) on Arousal and Awakening Time Following Thiopental Anesthesia. MELVIN L. BERNSTINE, M.D., AND JOSEPH P. MOSKAL, M.D. *Department of Anesthesiology, Albert Einstein Medical Center, Philadelphia, Pennsylvania.* Vandid, the diethylamide of vanillic acid, has properties similar to Coramine, the diethylamide of nicotinic acid. In animals, intravenous injection is followed by a transient apnea (prevented by vagal blocking), followed by a two or three-fold increase in depth of respiration. Blood pressure falls transiently before a sharp rise of short duration. In man, the respiratory effects are similar; however, there is no effect on blood pressure unless it is below normal, in which case it usually returns to normal levels. This drug alone has been used to treat 8 cases of severe barbiturate intoxication. Six of the 8 patients recovered within twelve hours or less. A study was made of the action of Vandid following operation using