methadone treatment. Drug usage was monitored in follow-up by weekly urine surveillance until illicit drug use returned to 50% over a 60-day period. Half of the participants remained abstinent for at least 30 days after completing the contract (M=101.5 days, SD=188.4 days). Latency to relapse was at least 100 days for 13 of the 20 participants (M=230.9 days, SD=213.5 days).

NICOTINE EFFECTS ON HUMAN AVOIDANCE RESPONDING. Don R. Cherek, Joel L. Steinberg. Dept. of Psychiatry, Louisiana State University Medical Center; Thomas H. Kelley. Veterans Administration Medical Center, Shreveport, LA; Neal L. Benowitz. Dept. of Medicine, University of California, San Francisco.

Male subjects were administered nicotine gum or took varying numbers of puffs on research cigarettes which delivered either 0.42 or 2.14 mg of nicotine prior to sessions. During sessions, lever pressing was maintained by avoidance of point loss (1 point=10 cents) on a free-operant avoidance schedule. Nicotine gum (2–8 mg) resulted in no change in avoidance responding in some subjects. Puffs on high nicotine cigarettes produced increased avoidance responding in all subjects. The behavioral effects of nicotine were determined by historical exposure levels and not nicotine blood levels.

BRAIN SITES INVOLVED IN THE BEHAVIORAL EFFECTS ON INTRAVENTRICULARLY ADMINISTERED (−)-NICOTINE. Victor J. DeNoble and Paul C. Mele. Virginia Commonwealth University.

Fifteen hooded rats were trained to lever press for food under a fixed ratio (FR) 32 schedule. All rats were implanted with two cannulae, one in the lateral ventricle (LV) and the second in one of the following brain structures: dorsal hippocampus (DH), locus ceruleus (LC), lateral hypothalamus (LH), reticular formation (RF), or the vestibular nucleus (VN). All rats when infused with 5.0 μg (−)-nicotine (LV) or 0.25 μg in the VN showed an increased latency to complete the first ratio (mean=8.2±1.3 min). When lidocaine (5.0 μg) was applied to the RF the latency to complete the first ratio following 5.0 μg (−)-nicotine infusion into the LV was decreased by 55%. Lidocaine in the VN completely blocked the effect of LV (−)-nicotine. Neither lidocaine nor (−)-nicotine had any effect on responding when applied to the other brain structures.

MEMORY ENHANCEMENT WITH CLONIDINE IN SCHIZOPHRENIA. Robert B. Fields, Jules Rosen, Jeffrey Peters and Daniel P. Van Kammen. Veterans Administration Medical Center, Pittsburgh, PA.

This double-blind study examined the effect of clonidine, a central alpha$_2$ adrenergic agonist, on the memory functioning of hospitalized schizophrenics. Eight patients were tested while drug free and while on stable doses of clonidine (0.8 to 1.4 mg/day) for approximately five weeks. Memory test scores were significantly better during the clonidine trials. This difference could not be explained by changes in general cognitive functioning, sustained attention, or level of psychosis as no significant differences in these indices were found. The present findings are consistent with recent reports which suggest that clonidine may enhance memory functioning only when memory deficits exist.

OBJECTIVE AND SUBJECTIVE AGGRESSION MEASURES: EFFECTS OF ALCOHOL AND DIAZEPAM. Joel L. Steinberg, Don R. Cherek and Thomas H. Kelly. Dept. of Psychiatry, Louisiana State University Medical Center.

Diazepam was administered to nine normal human subjects to determine its acute effects on aggressive behavior in a behavioral laboratory setting. The subjects were adult males who were screened by psychiatric, physical, and laboratory examinations to be in good health and to exclude subjects with mental disorders or substance abuse. Aggressive behavior was defined as the delivery of an aversive stimulus to another person. Specifically, the subject would press a button on an FR 10 schedule which ostensibly subtracted money from a fictitious person with whom the subject was told he was paired. Aggressive responses were provoked by random subtractions of money from the subject which were attributed to the other person. Aggressive responses were maintained by a provocation-free interval (PFI), of 500 sec or 125 sec, according to an escape contingency. A non-aggressive response option was concurrently available by pressing a button to earn points exchangeable for money, on an FR 100 schedule. Diazepam was administered double blind in doses of 0, 2.5, 5, and 10 mg per 70 kg of body weight, in a repeated measures design in which each subject received each dose for three sessions. Eight subjects showed decreases in aggressive responses after 10 mg/70 kg diazepam, and one subject showed increases at this dose. Diazepam produced small and variable effects on non-aggressive, monetary reinforced responding which did not appear to correlate with the rate of aggressive responding, thus indicating a relatively specific effect on aggressive behavior.

At the end of each dose-response determination, the subjects were administered a single dose of 0.5 g/kg of alcohol. The correlation coefficient between the effects of alcohol and diazepam on aggressive responses in 11 subjects from two separate studies was 0.918 ($p<0.001$). The data suggest that subjects who exhibit increases in aggressive responses following alcohol administration appear likely to increase aggressive response following diazepam. Preliminary results also indicate that subjects who had low scores on the Buss-Durkee Hostility Inventory showed decreased aggressive responses after diazepam administration.

PHARMACOLOGICAL CHARACTERIZATION OF SUPERSENSITIVITY TO NALTREXONE IN SQUIRREL MONKEYS. Charles P. France and William H. Morse. Harvard Medical School.

Repeated weekly exposure to naltrexone was examined in squirrel monkeys responding under fixed-ratio schedules of food presentation or stimulus-shock termination. After six weekly naltrexone exposures the food-controlled (F) monkeys were 300- to 1000-fold more sensitive than the shock-controlled (S) monkeys to the rate-suppressing effects of naltrexone. The difference in sensitivity between F and S monkeys was 3- to 10-fold for MR 2266 and WIN 44,441, and at