ETHANOL CONSUMPTION AS A FUNCTION OF ETHANOL PROCUREMENT COST. Anthony Liguori, Paula Steffen and Henry Marcucella. Boston University, Boston, MA.

In a simulated foraging environment, seven rats lever-pressed to obtain access to food, water, and ethanol. As the response requirement for ethanol access was increased from fixed ratio 1 to fixed ratio 175, six of the animals continued to respond for ethanol. Rats with high food access costs were less likely to reduce ethanol consumption than were rats with low food access costs. The results suggest that 1) ethanol served as a partial substitute for food when food access cost was high, and 2) animals without food access constraints will respond at high rates for ethanol access.

AN ALCOHOL COMPENSATION EFFECT PRODUCED BY EXPECTATIONS AND NOT ALCOHOL. W. M. Lapp, R. L. Collins and C. V. Izzo. New York State Research Institute on Alcoholism, Buffalo, NY.

An alcohol compensation effect (ACE) was observed using the balanced placebo design that depended upon the subject's expectation that they had consumed alcohol and not by alcohol itself. The effect was observed using a multidimensional categorization task that factorially combined three separable stimulus dimensions and was diagnostic with respect to both selective and divided attention. Results showed that the ACE varied as a function of task complexity such that harder tasks produced a larger ACE and were therefore consistent with a general resource allocation model of attention that is equipped with a pool of resources of variable size.

TOWARD A MEDIATIONAL MODEL OF ALCOHOL EXPECTANCY. Gregory T. Smith. University of Kentucky, Lexington, KY; Mark S. Goldman. University of South Florida, Tampa, FL.

Recent developments in alcohol expectancy theory suggest that expectancies can be understood as mediators of the influence of prior alcohol-related learning on drinking behavior. This study tested such a model on a large sample of adolescents (n = 608 16- to 18-year-olds). As hypothesized, it was found that (a) an index of family drinking behavior, the expectancy for social enhancement from alcohol, and adolescent drinking were all related; (b) the expectancy partially mediated the influence of family drinking; and (c) the expectancy accounted for 10 times the adolescent drinking variance than did family drinking, and so likely mediates the influences of other important independent variables as well. Experimental studies are necessary to complement correlation-based models such as this one. (Supported by NIAAA.)

GROUP POSTER SESSION
Chair: *Stephen T. Higgins*, University of Vermont, Burlington, VT

EFFECTS OF ACRYLAMIDE ON NEUROBEHAVIORAL FUNCTIONING IN THE PIGEON. Stephen A. Daniel. Mercy College, Dobbs Ferry, NY; Hassan A. N. El-Fawal, Frederick R. Moon and Hugh L. Evans. New York University Medical Center, New York, NY.

Acrylamide, an industrial chemical with well-described neuropathic effects, is an important reference neurotoxicant. The dose- and time-effects of subchronic acrylamide on feeding behavior and motor function in pigeons were tested. All doses of acrylamide resulted in effects on either posture (20, 30 or 60 mg/kg/day) or stride length (45 mg/kg/day). Effects on accuracy of feeding behavior were noted at 30, 45 and 60 mg/kg/day. Behavioral tests of motor function and feeding behavior both revealed early effects of acrylamide, which is of interest to scientists who require non-invasive tests for neurobehavioral functioning.

MEDIATION OF MORPHINE WITHDRAWAL AGGRESSION BY DOPAMINERGIC AGENTS. J. W. Tidey and Klaus A. Miczek. Tufts University, Medford, MA.

Altered motor and enhanced aggressive behavior during opiate withdrawal may be due to disruptions of dopamine activity. Male CFW mice were administered d-amphetamine, SKF38393 (D1 agonist), quinpirole (D2 agonist), or a combination at different times after morphine pellet removal. Rearing and walking were greatly reduced and grooming was increased 5 hr into withdrawal; these effects returned to control levels by 48 hr. Morphine withdrawal provoked heightened attack and threat behavior toward a male conspecific, persisting at least 96 hr. In withdrawn mice d-amphetamine maintained the enhanced aggression; more selective D1/D2 agonists partially mimicked the effects of d-amphetamine on aggressive but not motor behaviors.

DISCRIMINATIVE STIMULUS PROFILE OF BUPRENORPHINE IN MORPHINE-DEPENDENT PIGEONS. Eve M. Versage, Philip J. Goushaw and Alice M. Young. Wayne State University, Detroit, MI.

Experiments compared the generalization patterns of the mu opioid partial agonist buprenorphine in morphine-dependent and withdrawn pigeons. Pigeons (N = 5) were trained to discriminate among IM injections of 17.8 mg/kg morphine, saline, and 0.056 mg/kg naltrexone. Performance was maintained under FR 30 schedules of food delivery six hours after daily treatment with 10 mg/kg morpine. In four subjects, withholding the morning morphine injection evoked complete naltrexone-appropriate responding. Buprenorphine (1.0–32 mg/kg) evoked only saline-appropriate responding in both dependent and withdrawn birds, followed by a prolonged antagonism of the morphine training dose. Thus, buprenorphine displayed limited agonist efficacy in morphine-dependent birds. (Supported by USPHS grants DA-03796 and K02-DA00132.)

CLONIDINE, DIAZEPAM AND TELEMETERED AUTONOMIC RESPONSES TO SOCIAL STRESS. W. Tornatzky and Klaus A. Miczek. Tufts University, Medford, MA.

Animals confronted with an aggressing opponent react with defensive, submissive behavior and increased cardiovascular activity. The heart rate and core temperature of the experimental rats were monitored by telemetry while being exposed for 1 hr to the threats of an opponent. The tachycardia and hyperthermia were dose-dependently attenuated by clonidine. Diazepam, in contrast, did not affect the tachycardic but delayed the hyperthermic reaction during the interaction. With either diazepam or clonidine the high levels of defensive behavior were maintained even at muscle relaxant doses. The massive autonomic reactions during social conflict appear to be differentially affected by adrenergic- and GABA-A-receptor agonists.

ULTRASOUNDS AS A MEASURE OF DISTRESS DURING MORPHINE WITHDRAWAL. J. A. Vivian and Klaus A.

Miczek. Tufts University, Medford, MA.

Ultrasounds (US) in rats may serve a communicative purpose or indicate affective state as they occur only in highly significant situations, such as sex and aggression. Sixty male Long-Evans rats with differential social experience were withdrawn from morphine or placebo pellets; equally treated pairs were observed for 10 min and while solitary at 6, 24 and 96 hr after pellet removal. Withdrawn rats lost weight, displayed "wet dog" shakes, hyperactivity and US, peaking at 24 hr. Defeat experienced withdrawn rats markedly increased their rate and duration of US. Opioid involvement in US generation is demonstrated and is influenced by previous behavioral experience.

ANTAGONISM OF THE PROAGGRESSIVE EFFECTS OF ETHANOL IN SQUIRREL MONKEYS. E. M. Weerts and Klaus A. Miczek. Tufts University, Medford, MA.

Dominant male squirrel monkeys treated with 0.1, 0.3 g/kg ETOH threatened rival males more frequently, whereas 1.0, 1.5 g/kg ETOH reduced these behaviors and produced ataxia. A beta-carboline benzodiazepine receptor antagonist, ZK 93426 (3 mg/kg) antagonized only the aggression-enhancing effects of ETOH as well as the frequency of ETOH-induced staggering. ZK may possess mild agonist and inverse agonist properties. ZK (1, 3, 10 mg/kg) administered to animals in the social group significantly decreased the duration of being the target of aggression, and 10 mg/kg ZK decreased aggressive threats. Blockage of the benzodiazepine receptor attenuates the proaggressive and motor incoordinating effects of ETOH.

CONTACT TRACING IS NEEDED, MANDATORY HIV TESTING IS NOT. Dominic A. Phillippis, David S. Metzger, George E. Woody and Helen Navaline. University of Pennsylvania, Veterans Administration Medical Center, Philadelphia, PA.

Central to both HIV testing and contact tracing issues is the need to achieve a balance between the individual's right to privacy (and, if necessary, treatment) and the public health. The success of any legislation designed to achieve this balance depends on the compliance of those groups most affected by such legislation. With this in mind, an opinion survey on the two aforementioned issues was conducted on one such group—196 methadone clients from two Philadelphia clinics. We conclude that voluntary testing is preferable to testing mandated by law, especially in light of the success of voluntary testing initiatives. However, contact tracing of partners (sexual and/or needle sharing) of infected individuals is endorsed as a means of introducing these individuals most at risk for contracting HIV in the health care delivery system.

TREATING ISRAELI OPIATE ADDICTS WITH METHADONE MAINTENANCE VS. CLONIDINE DETOXIFICATION. Y. ShamHam, E. Shufman, Y. K. Bar-el, J. M. Scher, Z. Zlotogorski and E. Cohen. Uniformed Services University of the Health Sciences, Bethesda, MD.

This 13-month longitudinal study compared the effectiveness of two treatment programs, Methadone Maintenance (MM) with adjunct long-term psychotherapy and Clonidine Detoxification (CD) with adjunct long-term psychotherapy and antidepressants in Israel. One hundred and five heroin addicts participated in the study. The results showed that the combined treatment of CD, antidepressants was more effective than the traditional MM treatment in reducing the heroin use and dropout rate. The fact that the Israeli drug addicts use low dosages of heroin, and that methadone is a popular illegal drug in Israel may explain the greater efficacy of the clonidine detoxification approach.

ALCOHOL DOSE EFFECTS ON THE CARDIOVASCULAR STRESS RESPONSE OF MEN AT DIFFERING RISKS FOR ALCOHOLISM. Sherry H. Stewart, Peter R. Finn, Robert O. Pihl. McGill University, Montreal, Quebec, Canada.

The cardiovascular hyperreactivity to stressors observed in males with multigenerational family histories of alcoholism (i.e., high-risk MFH men) has been found to be significantly dampened by high doses of alcohol (Finn and Pihl, 1987, 1988; Finn, Zeitouni and Pihl, 1990). The present study examined the effects of different doses of alcohol on cardiovascular reactivity in MFH men versus FH controls. Subjects were assigned to one of five alcohol doses (active placebo, 0.50, 0.75, 1.00, or 1.32 ml/kg body weight). Cardiovascular reactivity to a shock stressor was examined in these men while sober and after consuming alcohol. The cardiovascular reactivity dampening effect in MFH males was evident only at moderate to high doses of alcohol, suggesting that these men must consume moderately high doses in order to obtain the potentially reinforcing effects of alcohol.

BEHAVIORAL PERFORMANCE IN AN MPTP-PARKINSONIAN CO-GRAFTED MONKEY. J. E. Ellis and L. D. Byrd. Yerkes Primate Research Center; and R. A. E. Bakay. Emory University School of Medicine, Atlanta, GA.

In order to characterize an animal model of MPTP-induced hemiparkinsonism and the recovery of motor function following transplantation of adrenal tissue into the lesioned area, a rhesus monkey (*Macaca mulatta*) was trained to perform a discrete-trial, operant task which resulted in food presentation. After behavioral performance had stabilized on the task and a high level of accuracy was maintained, MPTP (2.0 mg/kg) was injected via the left carotid artery to produce marked impairment of movement of the right arm. Subsequently, medullary tissue was removed from the left adrenal gland and transplanted along with peripheral nerve to the left caudate nucleus. Right and left hand performances were comparable on all dependent measures in the baseline condition, including response time, response accuracy and trials completed. Performance with the right hand was severely impaired following unilateral MPTP treatment, however, and the dependent measures reflected decreased motor control with the right hand. When adrenal medullary tissue was transplanted along with peripheral nerve into the brain, right hand performance exhibited a recovery of function over time. The data indicate that the rhesus monkey and the behavioral task developed during this study can be efficacious in characterizing the effects of MPTP, a neurotoxin, on the CNS and on motor function and in assessing the recovery of function following transplantation into lesioned areas of the brain. (Supported by the American Parkinson Disease Association, Veterans Administration, and USPHS Grants NS-24340, DA-01161 and RR-00165.)

PANCREATIC INSULIN PARTIALLY MEDIATES THE NICOTINE-BODY WEIGHT RELATIONSHIP. Margarita Raygada, Stephanie M. Nespor and Neil E. Grunberg. Uniformed Services University, Bethesda, MD.

The inverse relationship between nicotine and body weight is