

Rats were trained to discriminate the kappa agonist, ethylketocyclazocine (EKC; 0.3 mg/kg), from saline under a two-lever, fixed-ratio 30 (food) schedule. Dose-effect curves were determined for EKC, pentazocine and bremazocine alone and in combination with tripeleppamine (TRP). Although TRP (0.3–10.0 mg/kg) alone did not substitute for EKC, it attenuated the EKC-like effects of each drug at one or more doses when combined with the opioids. Response rates were generally increased when each drug was tested with a low dose of TRP, while rates were decreased with a higher dose. Attenuation of the kappa-like properties of opioids may explain the use of TRP with pentazocine in the "T's & Blues" combination.

THE ROLE OF HISTAMINE IN PCP'S DISCRIMINATIVE STIMULUS PROPERTIES. Paul A. Gore, Jr. and Barbara L. Slifer. University of New Orleans-Lakeside, New Orleans, LA.

Rats were trained to discriminate phencyclidine (PCP; 3.0 mg/kg), from saline under a two-lever, fixed-ratio 3 (food) schedule. Dose-effect curves were determined for PCP and pentazocine (PTZ) alone and in combination with doses of tripeleppamine (TRP). At the high dose (30.0 mg/kg), PTZ produced 65% drug-lever responding, while doses of TRP produced less than 10% PCP responding. TRP in combination with PTZ or PCP did not affect PCP-lever responding; however, the antihistamine plus PCP resulted in an increase in response rates. These data suggest that histamine antagonism neither potentiates nor attenuates PCP-like discriminative stimulus properties.

TOLERANCE TO PHYSOSTIGMINE'S EFFECTS ON SCHEDULE-CONTROLLED BEHAVIOR IN RATS. Raymond F. Genovese, Timothy F. Elmore, Jeffrey M. Witkin and Lisa R. King. Walter Reed Army Institute of Research, Washington, DC.

Three experiments investigated the effects of chronic administration of physostigmine in rats responding under mult FR,EXT schedules of food reinforcement. Tolerance to physostigmine's response rate decreasing effects was observed in rats under a mult FR10,EXT schedule. Tolerance was observed with pre-session as well as post-session administration. Tolerance was retained for up to 25 drug-free days. Cross-tolerance to oxotremorine's effects was observed with a three times daily administration regimen of physostigmine, but not with a one time daily regimen. These results characterize environmental and pharmacological variables important to the development of tolerance to physostigmine's effects.

EFFECTS OF NICOTINE UPON PUNISHED RESPONDING IN HUMANS. Robert H. Bennett, Don R. Cherek, John D. Roache and John Grabowski. Mental Sciences Institute, University of Texas Health Sciences Center, Houston, TX.

Male subjects were administered varying doses of nicotine through tobacco smoke using the smoke inhalation spirometry procedure. The procedure ensured constant puff volume and introduced the smoke deep into the lungs. The doses delivered through research cigarettes were 0.3 mg, 1.2 mg, 2.0 mg and 2.7 mg nicotine (F.T.C. yield) per cigarette. Following the inhalation procedure, subjects were exposed

to a multiple schedule with one component being an RI 20 sec of reinforcement (point additions) and the second component an RI 20 sec schedule with a concurrent VR 30 schedule of point subtractions. The research permitted analysis of dose-related effects of nicotine upon behavior in an aversive situation (punishment).

NICOTINE CESSATION AFFECTS PLASMA INSULIN AND GLUCOSE LEVELS IN RATS. Neil E. Grunberg, Stephanie M. Nespor, Kathryn A. Popp, Margarita Raygada, Elizabeth C. Sibolboro and Suzan E. Winders. Uniformed Services University of the Health Sciences, Bethesda, MD.

There is an inverse relationship between nicotine administration and body weight. Previous research has shown that chronic nicotine administration decreases circulating insulin levels and may thereby affect energy utilization. The present study was designed to examine the effects of cessation of nicotine administration on insulin and glucose. Cessation of chronic nicotine administration was accompanied by persistent increases of circulating levels of insulin and short-lived decreases of circulating glucose levels. The effects of cessation of nicotine on insulin were consistent with increases in body weight and changes in preference for sweet food shown after nicotine cessation.

NICOTINE GUM AND SKILLS TRAINING WITH OLDER, HEAVILY-ADDICTED, CHRONICALLY-ILL SMOKERS. Timothy P. Carmody. Veterans Administration Medical Center, San Francisco, CA; Robert G. Hall, Julia S. Breckenridge and James N. Breckenridge. Veterans Administration Medical Center, Palo Alto, CA; and Sharon M. Hall. University of California, San Francisco, CA.

The present study investigated the effects of a smoking cessation program combining nicotine gum and cognitive-behavioral skills training with older, heavily-addicted, chronically-ill smokers. Initially, 40 smokers were randomly assigned to either an intervention in which behavioral skills training was combined with nicotine gum or another condition in which nicotine gum was used with minimal follow-up contact. Abstinence rates at three months were not significantly different for these two intervention conditions. With a larger sample of 59 smokers, it was found that abstinence rates at three months were significantly lower for those smokers with elevated diastolic blood pressure. In addition, there was a trend for those smokers who had reduced their smoking more before entering the program to be more successful in quitting. These findings have implications for designing smoking cessation treatments for recalcitrant and recidivism-prone groups of older, heavily-addicted, chronically-ill smokers.

MARIJUANA EFFECTS ON TOBACCO CIGARETTE SMOKING BEHAVIOR. Thomas H. Kelly, Richard W. Foltin, Marian W. Fischman and Joseph V. Brady. The Johns Hopkins University School of Medicine, Baltimore, MD.

This study investigated the relationship between marijuana and tobacco smoking behavior in subjects who reported occasional marijuana use outside the laboratory. Eight male adults who participated in residential studies of marijuana effects on social behavior smoked their preferred brands of tobacco ad lib during normal waking hours. Sub-