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ETHANOL CONSUMPTION AS A FUNCTION OF THE SCHEDULE OF ETHANOL AVAILABILITY PERIODS. Henry Marcucella and Ilse Munro, Boston University, Boston, MA 02215 and James S. MacDonall, Fordham University, Bronx, NY 10458.

The present experiment demonstrated that ethanol dose and dose-interval relationships in oral self selection procedures can be indirectly controlled by altering the schedule of ethanol availability. Thirty-two male albino rats, maintained at 80% of their ad lib weight, were first exposed to ten baseline sessions in which either 8% or 32% ethanol was continuously available. Each subject was then exposed to one of four periodic availability schedules for 30 sessions. During each 23 hr session, the period of ethanol availability was held constant at 20 min while the time between ethanol availability periods was either 70, 160, 340, or 700 min. Following periodic availability, all subjects were returned to continuous ethanol availability for 10 sessions. Water was continuously available throughout the experiment. The 70 and 160 min animals at both concentrations consumed more ethanol (g/kg) during periodic availability than during the initial baseline period of continuous availability. The 340 min animals consumed an equal amount, and the 700 min animals consumed half as much. A molecular analysis of ethanol responding revealed that the mean amount of ethanol consumed during any consecutive 20 min period of ethanol availability was greater during periodic ethanol availability than during continuous ethanol availability. As the time between ethanol availability periods increased, the amount consumed per period increased. For the 32% animals at the 700 min duration, ethanol consumption in several 20 min episodes approached 7.0 g/kg. Upon return to continuous availability, total daily consumption increased but the amount consumed in any consecutive 20 min period returned to baseline levels. The change in amount consumed per episode was clearly an effect of varying the time between ethanol availability periods. The results suggest that periodic rather than continual availability is more likely to produce the patterns of consumption necessary for the establishment of dependence. (Supported by NIAAA Grant AA-3172.)

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DOSE ALTERATIONS IN METHADONE MAINTENANCE PATIENTS. M. L. Stitzer, G. E. Bigelow, and I. Liebson, Department of Psychiatry and Behavioral Biology, Johns Hopkins University School of Medicine and Baltimore City Hospitals, Baltimore, MD 21224.

Two studies are reported in which patients maintained on 30–80 mg/day (average dose=53 mg/day) methadone were exposed to single day dose increases and dose decreases. Subjects reported symptomatic effects of altered doses on a 59 item symptom checklist which was completed 24 hours after ingesting the dose. In the first experiment a range of altered doses as large as 100% of the stable dose were studied, and subjects were informed via labels on the medication bottle of the direction and size of altered doses. Statistically significant elevation of symptom scores was observed following dose decreases and the extent of elevation was related to the size of altered dose. Small non-significant score elevations were observed following dose increases. Checklist items elevated following dose decreases and dose increases generally reflected symptoms typical of opiate withdrawal and opiate intoxication respectively. These results were replicated in a second study where subjects were exposed to altered doses which were 40% or 80% of the regular stable dose but were not informed as to the direction, size or schedule of altered doses. Subjects were able to detect the direction (increase or decrease) of altered doses on the basis of the taste of the methadone drink, and could accurately estimate the direction and relative magnitude of altered doses 24 hours after ingestion. Symptom scores on the 59 item checklist were elevated significantly and in a dose-related manner following dose decreases but not following dose increases, and the items elevated after dose decreases were symptoms typical of opiate withdrawal. These studies indicate that symptomatic effects of acute (single-day) dose manipulations can be reliably measured using self-report instruments in patients chronically maintained on methadone. Effects of dose decreases were related to size of the dose reduction and were apparent under two conditions which differed primarily in the amount of information provided about dose alterations. (Supported by USPHS research grant DA-01472.)