an abrupt rise in intramammary pressure and a behavioural response from the young.

Of 166 rats studied, 90 began to milk eject within 60 min of the young being applied to the nipples and thereafter gave milk ejections at regular intervals. Propranolol (1 mg/kg, i.v. or i.p.) was given to 49 of those which did not milk eject within 1 h, and 42 (86%) subsequently milk ejected. Of 27 rats that were left untreated only 3 (11%) began to milk eject. By contrast, practolol (1 mg/kg, i.v.) promoted milk ejection in only 1 of 10 animals—8 of the 9 failures milk ejected after being given propranolol. Intravenous infusions of adrenaline or isoprenaline (0.1–1.0 μg/min) abolished the milk-ejection reflex but simultaneously reduced the mammary response to exogenous oxytocin; both these actions were antagonized by propranolol. It is unlikely, however, that the failure of some rats to milk eject when anaesthetized and suckled is due to circulating adrenaline depressing the gland response. Such animals display a normal sensitivity to exogenous oxytocin, i.e. compared with animals which do milk eject. Thus, it would appear that the failure of rats to milk eject is the result of a central dysfunction, possible involving an adrenergic mechanism though not necessarily related to circulating amines.

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Effects of ethanol and chlordiazepoxide on social interaction in rats

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Although it is widely held that small doses of ethanol increase social behaviour in man, there is little experimental evidence to support this. In general ethanol has been found to decrease social behaviour in animals (e.g. Krsiak & Borgesova, 1973), but this may well be due to the large doses used. Ethanol (0.4 g/kg) was found to increase exploration in rats (File, unpublished observations) and it was thought that this dose might also increase social behaviour. In order to investigate whether any such increases could be related to anxiety reduction, social interaction between pairs of male rats was studied in conditions in which the level of fear was manipulated. This was done by altering the intensity of illumination and the rats' familiarity with the situation.

In the low fear condition ethanol (0.4 g/kg) did not change the duration of active social contact, but in conditions of moderate fear this dose increased active contact. In the high fear condition active contact was not significantly increased. A higher dose (1.2 g/kg) reduced active contact in all the test conditions, but this may have been secondary to motor impairments.

The effect of the anxiolytic drug, chlordiazepoxide, on social interaction was also studied in the same conditions. Chlordiazepoxide produced a dose related (2.5–7.5 mg/kg) decrease in active social contact and an increase in passive contact.

Both ethanol (0.4 g/kg) and chlordiazepoxide (5 mg/kg) increase exploration in rats, measured by head-dipping in a hole-board, and this effect might be due to anxiety reduction. However, the two drugs differ in their effects on social interaction. The effects of ethanol are consistent with anxiety reduction but the effect of an acute injection of chlordiazepoxide appears to resemble that of a sedative. However, rats pretreated with chlordiazepoxide (5 mg/kg) for 5 days and then tested for social interaction showed significantly increased active contact in conditions of moderate and high fear.

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