

the normal reaction threshold remains constant. The method seems to be suitable for testing the known types of anesthetic including the non-narcotic, narcotic and narcotic antagonist drugs.

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Automatic recording of the mouse abstinence syndrome

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Several attempts to understand the factors responsible for the development of physical dependence and tolerance to strong analgesics have involved experiments with mice (Maggiolo & Huidobro, 1962; Chiosa, Dumitrescu & Banaru, 1968; Way, Loh & Shen, 1968; Marshall & Grahame-Smith, 1970; Maruyama, Hayashi & Takemori, 1970; Shen, Loh & Way, 1970). The characteristic sign of abstinence in this species is uncontrollable jumping, which can be precipitated almost immediately by nalorphine or naloxone in morphine dependent mice. This response provides a convenient measure in the estimation of physical dependence capacities of prospective analgesics (Marshall & Weinstock, 1969; Saelens, Granat & Sawyer, 1971).

A simple automated apparatus which records the incidence of jumping photo-electrically will be demonstrated. Twelve mice, each housed in separate ventilated glass milk bottles (base diameter—7 cm; height—21 cm), are monitored simultaneously and 15 min print-outs enable the characterization of syndromes induced by narcotic antagonist injection or sudden drug withdrawal, respectively.

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