

## USE OF M50-50 AS A THERAPEUTIC DRUG FOR M99-INDUCED TRAUMA

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The recent decision of the U.S. Federal Drug Administration placing Sernylan (phencyclidine) on the list of Schedule 2 drugs has caused its previous manufacturers to cease production. M99 (etorphine) is also a Schedule 2 drug, but is still available. M99 has been used successfully to immobilize wild and captive bears for many years (Flyger et al., *Trans. North Am. Wildl. and Nat. Resour. Conf.* 32:107–119, 1967; Alford et al., *J. Am. Vet. Med. Assoc.* 164:702–705, 1974; Patenaude, *J. Am. Vet. Med. Assoc.*

175:1006–1007, 1979). One of the problems with the use of M99 is that it acts as a central nervous system depressant and may reduce respiration rates to dangerously low levels. Here we report an attempt to increase respiration by administration of a partial recovery dose of the antagonist M50-50 (diprenorphine).

After a brief chase, a 193-kg young adult male polar bear (*Ursus maritimus*) was given 4.5 mg of M99 intramuscularly via a “Cap-Chur” syringe dart (Palmer Chem. Co., Douglasville, Ga.). The bear was immobile 12 minutes after the injection, and was approached 8 minutes later. Approximately 30 minutes after injection, the respiratory rate had diminished to 1 breath/minute. Because 2 mg of M50-50 are required to reverse the effects of 1 mg

of M99, 1 mg of the antagonist (approximately 11% of the recovery dose) was administered intramuscularly to try to increase the respiration rate. About 15 minutes later respiration was still around 1 breath/minute, and an additional 1 mg of M50-50 was given.

Respiration improved visibly a few minutes after the 2nd injection. Six minutes later, the bear suddenly lifted its head, rose to a crouch, then lay back down with its head between its paws. As we approached the bear to administer additional M99, it suddenly arose and ran off.

Use of M50-50 as a drug to combat M99-induced trauma, specifically respiration depression, is not recommended unless rapid and complete recovery is desired.

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