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AT A GLANCE

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ANESTHESIOLOGY

Intranasal dexmedetomidine (Dexdomitor) in Dogs

In this [paper](#), 125 mcg/m² dexmedetomidine (Dexdomitor) was administered intranasally (IN) to dogs undergoing MRI examinations as a premed for propofol and isoflurane. The dogs receiving dexmedetomidine maintained blood pressure and body temperature better than those that did not receive the sedative. However, the pulse rate dropped in the dexmedetomidine group after 25-30 minutes compared to the dogs that did not receive dexmedetomidine.

A special mucosal atomization device was used to deliver the dexmedetomidine ([MAD 300, Wolfe Tory Medical, Inc](#)) [NB this product is now sold by Teleflex/Imaco and is available on [Amazon \\$218.42 for 25](#)]. If the total quantity to be administered was >0.5 ml, the dose was divided equally into both nostrils, otherwise only one nostril was used. Anesthesia was induced after 10 minutes. The authors found it difficult to medicate short-muzzled dogs.

In a 2022 [paper](#), a dose of 5 mcg/kg (~125 mcg/m²) dexmedetomidine IN in healthy dogs resulted in onset of sedation at 8-9 minutes with **maximal sedation at 30-35 minutes**. There were no differences in HR, SBP, DBP or MAP in the IN vs IM groups.

The [Dexdomitor package insert](#) lists doses for 125, 375 and 500 mcg/m². Dose ranges in this study using 125 mcg/m² were equivalent to 5-8 mcg/kg. A [2017 study](#) used **20 mcg/kg (0.02 mg/kg) IN or IM which would be comparable to the 375 to 500 mcg/m² dosing for heavy sedation/analgesia**. The dogs receiving IN dexmedetomidine in the 2017 study experienced more

profound sedation but less bradycardia than the IM group. Another [study](#) using **20 mcg/kg** compared the effects of IN or IM dexmedetomidine on echocardiographic parameters. The dogs receiving dexmedetomidine IM had decreased systolic function and cardiac output, whereas the IN dogs maintained normal values. The **onset of lateral recumbency** was more consistent with intranasal (IN) administration, occurring at **about 21 minutes**. Dogs remained **laterally recumbent for approximately 1 hour with IN administration compared to 45 minutes with intramuscular (IM) administration**. **IN dogs took about 30 minutes to stand from lateral recumbency, while IM dogs took about an hour**. A 2017 study using the same 20 mcg/kg dose reported an **onset of sedation at approximately 6 minutes for IN** and 9 minutes for IM (not a significant difference), but the IN group had more profound sedation. The heart rate showed a maximum decrease of 56% in the IM group vs 18% in the IN group.

Intranasal dexmedetomidine has been used in children at doses of 2-4 mcg/kg for procedural sedation [[ref](#)][[ref](#)][[ref](#)]. Studies in humans indicate no difference in bioavailability or degree of sedation when using a mucosal atomization device (MAD) compared to drops from a syringe [[ref](#)]. Although I could not find a comparison for dexmedetomidine intranasal drops vs MAD in dogs, a [study using IN diazepam](#) found no significant difference between drops and using an atomizing device.

A [2019 review](#) of intranasal dexmedetomidine in children recommended using up to 0.2 ml per nostril, whereas in dogs, a [JAVMA paper](#) suggested 0.5 ml per nostril, similar to the volume used for Bordetella vaccines.

To summarize, **dexmedetomidine may be administered intranasally using the same doses as listed in the Dexdomitor product insert with minimal impact on cardiovascular function and more profound sedation**

