The HFNC junior interface fit well on 3 dogs; however, the adult interface had to be modified to fit well on the other 5 dogs. No differences were found with regard to vital parameters between the traditional nasal cannula and HFNC groups. The HFNC group showed good tolerance at 0.4 and 1 L/kg/min, acceptable tolerance at 2 L/kg/min, and poor tolerance at 2.5 L/kg/min, with CPAP being achieved at flows ≥1 L/kg/min. Dogs in the traditional nasal cannula group receiving 0.1 L/kg/min failed to have an increase in $FiO_2$ but achieved an average of 50% at 0.2 L/kg/min and 72% at 0.4 L/kg/min. With HFNC, $FiO_2$ averaged 72% at 0.4 L/kg/min and 95% for all other flow rates assessed, with minimal impact on ventilation. Dogs receiving HFNC showed radiographic evidence of aerophagia, but no other complications were noted.

## … TO YOUR PATIENTS

Key pearls to put into practice:

1. Although previously reported to be effective,[1] traditional nasal oxygen supplementation with 0.1 L/kg/min failed to achieve $FiO_2$ statistically different from room air in this study. Target levels of 0.2 to 0.4 L/kg/min should be considered.
2. HFNC oxygen therapy is well-tolerated at rates of 0.4 L/kg/min to 2 L/kg/min and can achieve CPAP at flows ≥1 L/kg/min with no significant complications. Nasal cannulas may need to be modified for medium- to large-sized dogs to achieve an appropriate fit/seal.
3. The dogs in this study had normal lungs. How these results extrapolate to patients with pulmonary compromise remains to be determined.

## Reference


1. Dunphy ED, Mann FA, Dodham JR, et al. Comparison of unilateral versus bilateral nasal catheters for oxygen administration in dogs. *J Vet Emerg Crit Care (San Antonio).* 2002;12(4):245-251.


# Research Note: **Once-Monthly Treatment for Feline Diabetes**

Glucagon-like peptide-1 receptor agonists (GLP-1RAs) such as exenatide show promise in the treatment of feline diabetes. GLP-1RAs stimulate insulin secretion by pancreatic β cells in the presence of high glucose levels. The investigators in this study developed a delivery system that allowed the slow release of a stable GLP-1RA analog, [Gln28]exenatide. The study first validated the pharmacokinetics and pharmacodynamics of exenatide vs [Gln128]exenatide in cats, after which the conjugate compound consisting of [Gln28]exenatide bonded to hydrogel microspheres was evaluated. The plasma half-life of the SC administered microsphere-[Gln28] exenatide conjugate was ≈40 days as compared with 40 minutes with the injected free peptide. The investigators concluded that GLP-1RA in this formulation is suitable for once-monthly SC administration in cats.

### Source

Schneider EL, Reid R, Parkes DG, Lutz TA, Ashley GW, Santi DV. A once-monthly GLP-1 receptor agonist for treatment of diabetic cats. *Domest Anim Endocrinol*. 2020;70:106373.