

Preparation for Successful Dental Extraction

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Regional Dental Blocks



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Indications:

- Any potentially painful oral procedure.
- Dental extractions
- Oral biopsies or mass removals
- Guided tissue regeneration
- Root canal procedure
- Trauma repair

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Anesthetic Agent

Lidocaine

- Toxic dose of 5 mg/kg – usually do not surpass 4 mg/kg
- Onset of action: 2-5 minutes
- Duration of analgesia: 1-2 hours
 - Surgical stimulation – 45 min – 1 hour



Bupivacaine

- Toxic dose of 2 mg/kg – usually do not surpass 1 mg/kg
- Onset of action: 10-15 minutes
- Duration of analgesia: 4-6 hours
- *Note: Toxic/fatal if administered intravenous!



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Volume per site for Dental block

Variable based on patient size:

- Cat or small dog (<10kg) – Calculate toxic volume and divide by 4
- Medium dog (10-25kg) – 0.2ml-0.4ml per site
- Large/giant breed dogs – 0.5ml-1ml per site

Note: These are suggestions only and clinical judgment should be used when determining anesthetic volume.

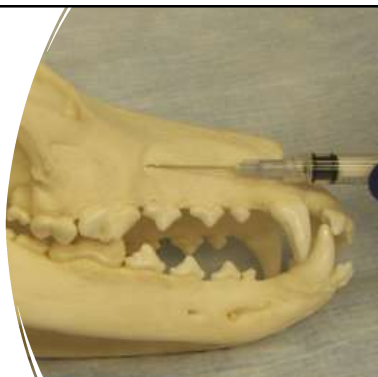
The more volume used – the further the anesthetic agent will diffuse.



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Infraorbital Block

Blocks buccal bone and soft tissue near PM3/4 and rostral.



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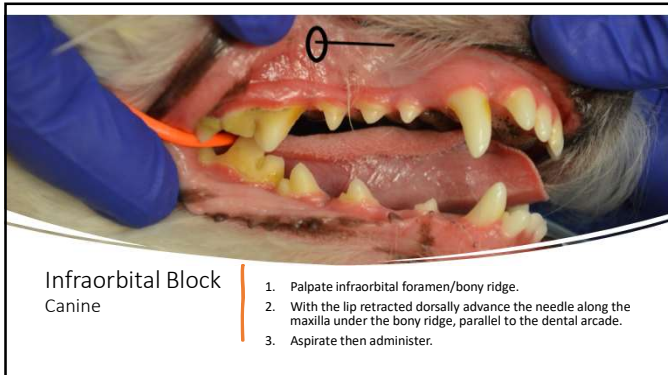
Infraorbital Block

Exception for very small toy dogs, cats and brachycephalic breeds:
This may block the molars as well.



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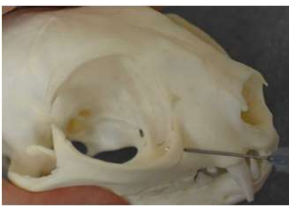
Infraorbital Block Canine

1. Palpate infraorbital foramen/bony ridge.
2. With the lip retracted dorsally advance the needle along the maxilla under the bony ridge, parallel to the dental arcade.
3. Aspirate then administer.

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Infraorbital Block

Feline



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Maxillary Block

Blocks buccal bone and soft tissue of entire maxillary arcade.



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Maxillary Block

1. Palpate the last maxillary molar and the zygomatic arch.
 - Make sure that the mouth is in a relaxed/closed position.
2. Insert the needle through the haired skin perpendicular to the maxilla.
3. Aspirate then administer.



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Mandibular Block (Inferior Alveolar)

Blocks buccal bone and soft tissue of entire mandibular arcade.



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Mandibular Block

Palpate the angular process of the mandible through the haired skin (yellow arrow).

Note the inferior alveolar nerve (short white arrow) and the location of the intended needle placement (long white arrow).



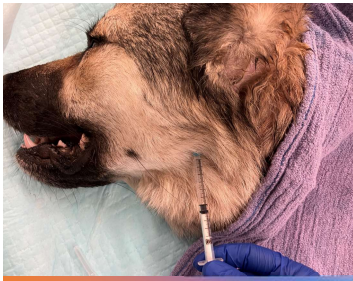
<https://www.auburn.edu/vet/education/graduate-student/clinical-nerve-blocks-dogs-cats/>



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Mandibular Block



1. Advance the needle on the lingual surface of the mandible just rostral to the angular process of the mandible.
 - Hold syringe and needle perpendicular to the mandible.
 - Can "hit" mandibular bone then "walk" off toward the lingual surface.
 - Advance the needle approximately ½ width of mandible.
2. Aspirate then administer.



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Potential Complications of Regional Dental Blocks

Benefits:

- **Patient comfort improved.**
 - During procedure and in recovery.
- Increased stability of anesthetic plane – inhaled gas sparing.

Potential Complications:

- Administration of anesthetic agent intravenous.
- Numbing of areas adjacent to preferred region:
 - Maxillary – retrobulbar space.
 - Mandibular – lingual nerve.
- Hematoma formation.



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Mucogingival Flaps



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Mucogingival Flaps

These flaps allow for access to underlying structures and facilitate tension free closure of surgical sites.

Plan ahead:

- What type of flap to make?
- If and where you are going to make any vertical incisions?
- Pay attention to the anatomy.
- How much tissue you have to work with?



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Mucogingival Flaps

Equipment needed:

- #15 scalpel blade
- Periosteotome (double end)
- Gingival/iris scissor
- Preferred suture
(4-0 or 5-0 Monocryl, taper)



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Envelope Flap



A sulcular incision is made into the attached gingiva parallel to the tooth.

Gingival elevator is used to expose the buccal bone.

No vertical incisions are made.



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Mucogingival Flap



Sulcular incision



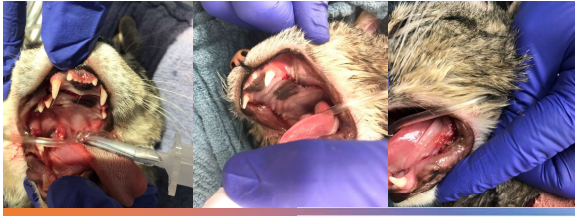
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Clinical Applications



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Clinical Application



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One Vertical Incision Flap



A sulcular incision is made into the attached gingiva parallel to the tooth

One vertical full thickness incision is made traversing apically past the mucogingival junction

Gingival elevator is used to expose the buccal bone



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Mucogingival Flap



Single vertical incision flap



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Clinical Application



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Clinical Application



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Two Vertical Incision Flap



A sulcular incision is made into the attached gingiva parallel to the tooth

Two vertical full thickness incisions are made traversing apically past the mucogingival junction

Gingival elevator is used to expose the buccal bone



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Mucogingival Flap



Double vertical incision flap

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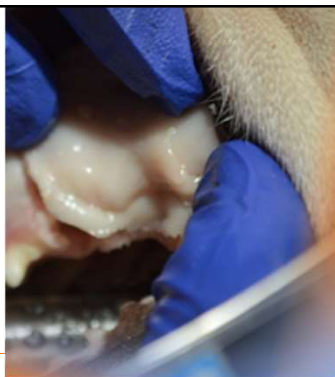
Clinical Application

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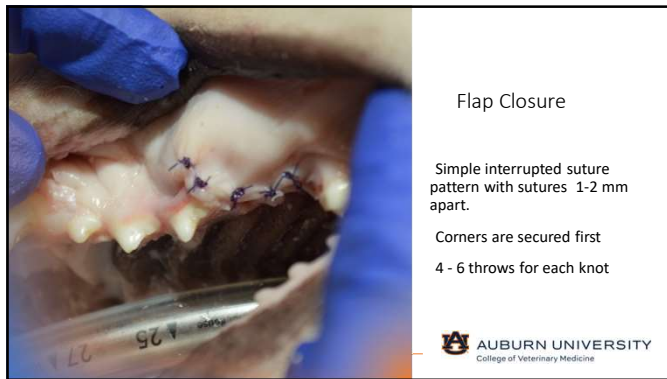
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Flap Closure

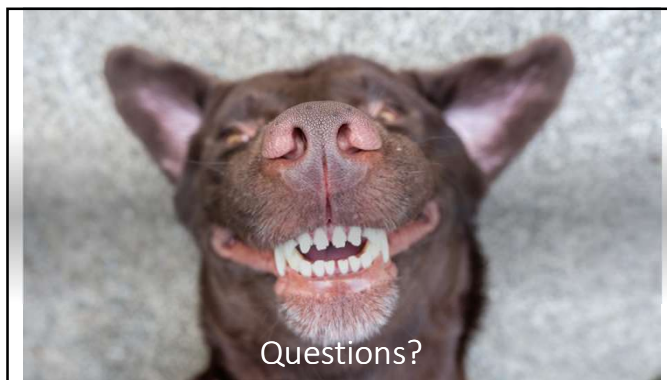
- **Tension free** closure is a must!
- Shape the flap for best fit, fresh tissue edges.
- Gentle tissue handling is important.
- Release the periosteum to allow for more mobility of the flap.



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