

Rabbit Dentistry


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(CP- exotic companion animals)
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Rabbit Dentistry


- Anatomy and Physiology
- Causes of Dental Disease
- Clinical Signs
- Diagnosis
 - Patient History
 - Physical Examination
 - Blood Analysis
 - Radiographic Examination
- Treatment
- Prevention



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Terminology

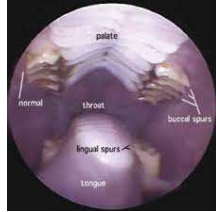
- Elodont – continually grow
- Aradicular – open apices, never forming true roots
- Hypsodont – elongated crown and body of tooth



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Terminology

- Buccal – toward the cheek
- Occlusal – surface of the tooth that contacts the teeth of the opposing jaw
- Lingual – toward the tongue

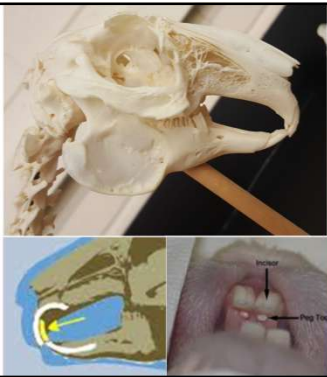


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Anatomy & Physiology

Rabbit dental formula:
 $I \ 2/1, \ C \ 0/0, \ P \ 3/2, \ M \ 3/3 = 28 \text{ teeth}$

- Peg teeth- small incisors located directly behind the larger set of 2 incisors



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Anatomy & Physiology

Rabbit dental formula:
 $I \ 2/1, \ C \ 0/0, \ P \ 3/2, \ M \ 3/3 = 28 \text{ teeth}$

- Maxillary incisors are shorter than the mandibular incisors
- Mandibular incisor have a longitudinal groove on labial surface
- Anisognathism- mandible is narrower than the maxilla




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Anatomy & Physiology

Rabbit dental formula:
I 2/1, C 0/0, P 3/2, M 3/3 =
28 teeth


- No canine teeth
- Diastema- space between the incisors and premolars
- Cheek teeth- premolars and molars are anatomically identical



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Anatomy & Physiology


- Clinical crown – the portion of the tooth visible above the gingival margin
- Reserve crown – the portion of the tooth below the gingival margin
- Cylindrical teeth
- Natural curve



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Anatomy & Physiology

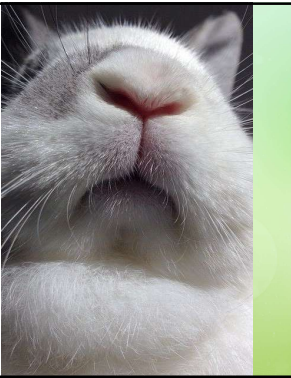
- Occlusal surface of maxillary cheek teeth curve buccally
- Occlusal surface of mandibular cheek teeth curves lingually



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Anatomy & Physiology


- Blind spot in front of mouth
- Sensitive vibrissae on lips assist in food location
- Prehensile lips



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Anatomy & Physiology

- Occlusal surfaces of cheek teeth are irregular
- Grinds coarse, fibrous material
- Normal side to side grinding movements of jaw during mastication keep the teeth worn to proper length and shape
- Teeth wear down approximately 2-2.4 mm per week




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Causes of Dental Disease

Dental disease results from any anatomic or physiologic abnormality that interferes with eruption or wear of incisors, cheek teeth, or both.

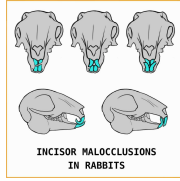
- Congenital - conditions present at birth
- Acquired - not inherited, but rather the result of external factors



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Causes of Dental Disease

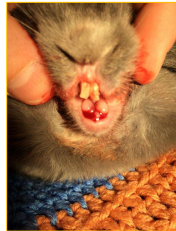
- Congenital- present at birth
 - Includes prognathism, brachygnathism, & other jaw malformations



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Causes of Dental Disease

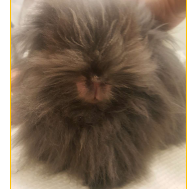
- Acquired - not inherited, but rather the result of external factors
 - Includes trauma (i.e. jaw fractures, broken teeth), systemic disease, neoplasia, & improper nutrition



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Clinical Signs

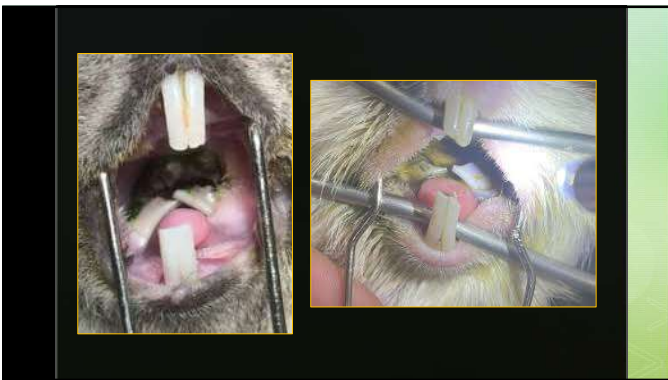
- Changes in eating ability or pattern
 - Anorexia, decreased food intake, selectiveness of food items, difficulty holding food in mouth
- Oral pain- anorexia and difficulty eating
- Choosing smaller & softer foods over hay
- Changes in fecal output, size, and appearance
- Excessive drooling, areas of wetness or hair loss under chin
- Inability to close mouth
- Entrapped tongue



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Clinical Signs

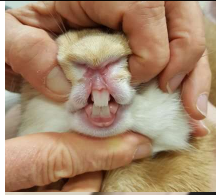
- Nasal discharge
- Elongation of maxillary teeth, especially incisors
- Matting of hair on forelimbs
- Epiphora or exophthalmos
- Facial masses or swellings
- Bruxism
- Uneven occlusal surfaces of cheek teeth

Two images are included in the slide. The top image shows a close-up of a rabbit's face, highlighting its eyes and nose. The bottom image is a dental X-ray showing the teeth and jaw structure.

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Diagnosis: Physical Examination

- The incisors are examined by pulling the lower lip down with the thumb and forefinger of one hand while using the thumb and forefinger of the other hand to pull the upper lip up and aside in similar fashion.
- Assess length, color, shape, quality of enamel, and occlusal edge
- Healthy incisors will be white and cylindrical, with a horizontal, chisel-shaped edge.
- When the jaw is at rest, the mandibular incisors should meet the peg teeth directly behind the maxillary incisors.



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Diagnosis: Physical Examination

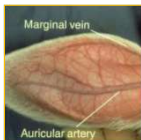
- Cheek teeth are impossible to examine without instrumentation and sedation.
- cursory exams of the occlusal surfaces can be performed using a bivalve nasal speculum or otoscope cone
- Endoscopes can be used to examine- allows for magnification to detect small lesions and ability to take photos



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Diagnosis: Blood Analysis

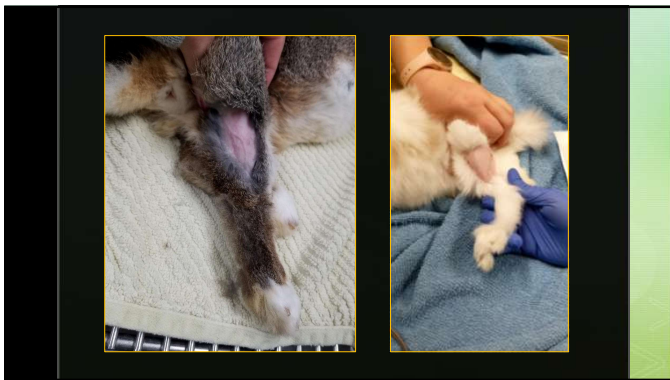
- Is systemic disease suspected?
- Is the rabbit going to be anesthetized?



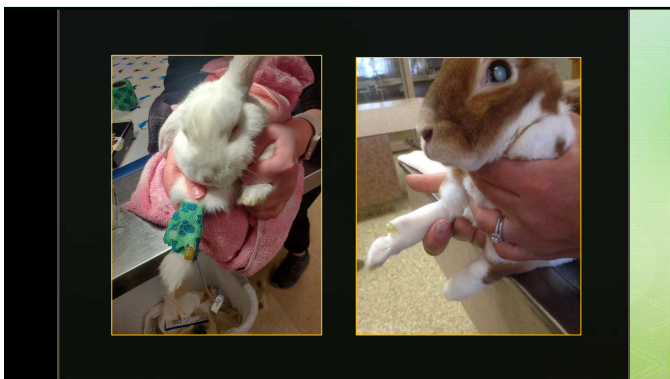
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Diagnosis: Radiographic Examination

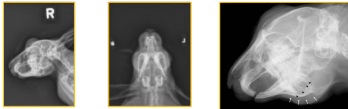
- Necessary for all patients with suspected dental disease
- The bulk of the teeth and the supporting structures is below the gumline, hidden from view during gross oral examination.
 - Tooth roots, jawbone, periodontium, nasolacrimal canal, intraalveolar portion of the teeth
 - Changes to these structures account for 80% of dental disease



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Diagnosis: Radiographic Examination

- Proper positioning is important for correct interpretation of images- sedate or anesthetize
- Standard projections:
 - Laterolateral skull view (yields the most valuable information)
 - Dorsoventral or ventrodorsal skull view
 - Right and left 40° oblique skull views



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Diagnosis: Radiographic Examination


- Laterolateral view
 - Most valuable information
 - Incisor teeth, cheek teeth, and supporting structures are easily evaluated for malocclusions
 - Bone appearance surrounding teeth can be assessed



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Diagnosis: Radiographic Examination


- Dorsoventral view
 - Helpful for evaluating the palatal and buccal margins of the cheek teeth and the zygomatic bone



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Diagnosis: Radiographic Examination

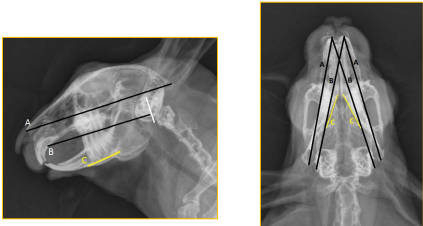
- Oblique projections of the skull
 - Useful for separating individual cheek teeth of the mandible and maxilla, which are superimposed in laterolateral views



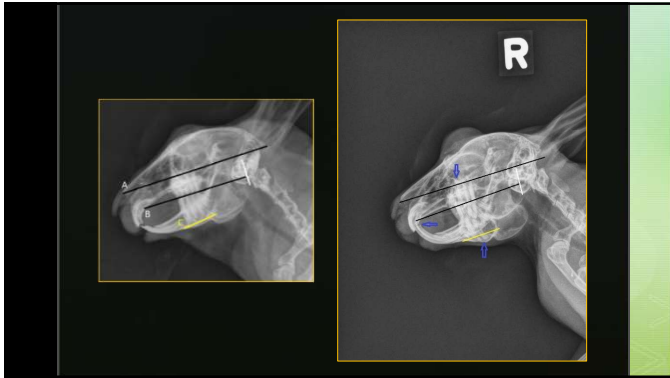
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Diagnosis: Radiographic Examination

- Boehmer and Crossley (2009) Anatomic Reference Lines



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Diagnosis: Radiographic Examination

- Computed Tomography (CT)
 - Alternative to dental radiography in specialty and academic facilities
 - Allows for 3-dimensional reconstruction of the skull, viewing of finer detail than radiographs, and isolation of areas or teeth of interest
 - Especially advantageous for evaluating intranasal structures, surrounding soft tissue structures, abscesses, and neoplasia

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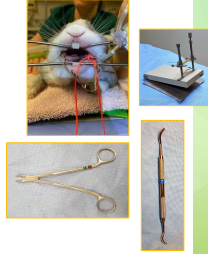
Treatment: Crown Height Reduction

- Can be curative in the beginning stages of dental disease when accompanied by diet correction and other preventative measures
- Will need to be performed repeatedly in cases of moderate to severe dental disease
- Dental burs or trimming forceps specifically designed for crown reduction- NEVER use rongeurs, nail trimmers or other manual cutting tools
- Anesthesia- to avoid missing sharp points or spurs or injury to the gums, cheeks, or tongue

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Treatment: Tooth Extractions

- Indicated for any tooth that is loose, infected/abscessed, fractured, or severely maloccluded
- Can be performed intraorally or extraorally
- Specialized equipment
 - Tabletop mouth gag, positioners, oral speculums, cheek dilators, spatulas, a low- to high-speed dental handpiece with a cheek guard, dental burs, and Crossley incisor, and molar luxators
- Anesthesia
- Nutritional support



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Treatment: Abscesses

- Are often associated with the periapical area of an infected incisor or cheek tooth
- Mandibular more common than maxillary abscesses
- Present as palpable masses
- Sometimes only detectable on radiograph or CT



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Treatment: Abscesses

- Treatment difficult- pus has a remarkably thick-to-solid consistency
- Remove the cause, which is usually 1 or more infected teeth
- Repeated lancing and flushing of the abscess, systemic antibiotics, complete surgical excision of the abscess, and antibiotic bead impregnation
- Analgesia & nutritional support



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Prevention



- Proper nutrition and husbandry
- Unlimited high fiber foods-good quality
- Diet that provides enough calcium for sufficient mineralization of their continually growing teeth and surrounding bone structures, but not so much calcium that urinary tract disease is a risk
 - Ideal dietary calcium is 0.5- 1%
- Pellets are not a necessary part of a rabbit's diet
- Dissuade buying rabbits from breeding stock with dental disease in their lineage

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Questions?



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