



## Feline Resorptive Lesions (FRLs)

One of the most common, yet most undiagnosed conditions that affect cats are feline resorptive lesions (FRLs). FRLs are painful lesions that can affect any and all teeth, and affects up to 60% of cats by the time they are 6 years old. The most commonly affected teeth include the lower premolar and molar teeth, as well as the upper premolar teeth. These lesions have been diagnosed in wild cat populations and have been known to occur for almost 100 years. Within the last 30 years the number of cats affected by this condition has rapidly risen, making it much more common today that it was in the past. In FRLs, the tooth structure is eaten away, leading to exposure and death of the sensitive pulp of the tooth.



The cat on the left has extensive resorption of the upper 3<sup>rd</sup> and 4<sup>th</sup> premolar teeth seen in this picture. Compare the shape of these teeth with the normal shape seen in the cat on the right to get an idea of how much tooth has been eaten away.

In the past, FRLs were called “Feline Cavities” out of the mistaken assumption that they were caused by the same process as cavities in people. This has been proven to be far from the truth, as FRLs are unrelated to dentin decay and bacteria, and do not respond to restorative measures like fillings. The appearance of FRLs varies from a pink spot on the tooth to an irregular shaped crown with gum tissue growing onto it. Others are visible only on dental x-rays. Careful oral examination and dental x-rays are absolutely important in the detection and treatment of these painful lesions.

Unfortunately, the cause of FRLs is still unknown. There are several theories about what causes resorption of the tooth, but none of these theories have been proven to be the whole story. Some FRLs

are caused by periodontal disease and inflammation, which can be prevented by home oral care. (See information on *periodontal disease* and *at home oral care*). For others, no inflammation is present, but the tooth damage is severe.

FRLs will progress and continue to be painful in spite of treatment aimed at restoring the tooth. This is why most require extraction of the tooth. Also, most cats with one FRL will develop other FRLs in the future, making regular anesthetized periodontal cleanings, oral examination, and dental radiographs important in these cats.



This image shows a tooth that broke off and left a root behind, due to resorption. These roots can be a source of pain and inflammation if not treated!

## Types of FRLs:

Feline resorptive lesions have been classified in several different ways. The classification that helps us to make the best decision for treating your cat divides FRLs into 3 types:

**Type 1 FRLs** are those that are frequently associated with periodontal disease. In these teeth, the crown and root can both be affected, but the entire tooth should be removed in order to complete cure all pain and inflammation associated with the lesion.



The tooth in this picture has both severe periodontal disease, with bone recession around the roots, as well as resorption of the 1<sup>st</sup> root. See the root tip that has broken off the rest of the root sitting in the bone? This is secondary to inflammation.

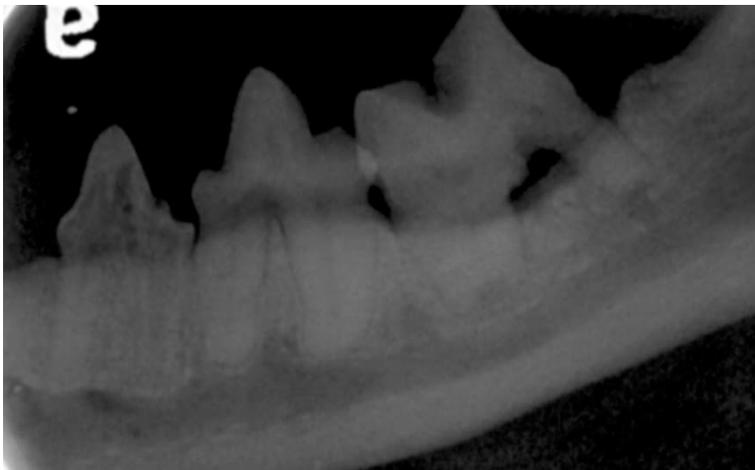
**Type 2 FRLs** are those that have no known cause, and result in substantial loss of the both root structure and crown. Sometimes, these lesions are diagnosed after the crown has already been lost due to severe resorption with only root fragments left that have fused to the bone. In type 2 FRLs, if there is substantial involvement of the roots, treatment may be aimed at complete removal of the tooth or removal of the crown only (**crown amputation**) in order to allow the resorptive process to continue to turn the roots into bone without performing major invasive surgery. If a crown amputation is in your

cat's best interests, recheck radiographs are important to monitor the roots as they continue to reabsorb.



This x-ray of the lower canines of a cat show that the canine tooth on the right is undergoing extensive type 2 resorption compared to the tooth on the left which has a relatively normal root. There is also a root fragment of an incisor, as well as type 2 resorption of a premolar as well!

**Type 3 FRLs** have features of both Type 1 and Type 2 FRLs. Extraction of the the whole tooth including the roots structure is recommended when type 3 FRLs are present.



This dental x-ray shows that both type 1 and type 2 resorption can occur in the same cat.