# A study on the prevalence and risk factors for feline chronic gingivostomatitis (FCGS).

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Feline chronic gingivostomatitis (FCGS) is characterised by inflammation and ulceration of the gums (gingivitis) and in the mouth (stomatitis) at the angles of the jaw. This inflammation leads to pain, difficulty in eating and sometimes bleeding. Unfortunately the disease tends to be chronic and generally does not respond well to treatment. The level of discomfort occasionally becomes a welfare issue and euthanasia of such cases is not uncommon.

FCGS is thought to be a relatively common condition in both pedigree and domestic cats. The cause of FCGS is not entirely clear but is likely to be multifactorial. The presence of dental disease may be an underlying cause in some cats but in the majority of cases the aetiology is unknown. A number of viruses and bacteria have been implicated in the syndrome but the role of each of these agents is currently unclear. A high percentage of cats with FCGS are shedding feline calicivirus (FCV), although many cats infected with this virus do not have chronic oral disease.

Cats with feline immunodeficiency virus (FIV) infection are also prone to FCGS although the precise role of FIV in this disease is not fully understood. The immune system may also play a part in the development of this disease, with recent studies showing a shift in cytokine expression in affected cats.

Thus although a number of factors have been suggested as playing a role in FCGS, no comprehensive epidemiological studies have been carried out to determine the prevalence of the disease in the cat population or exactly what risk factors predispose cats to the condition.

Below is a summary of the PhD study carried out by Kitty Healey at the University of Liverpool, funded by the Cat Welfare Trust and BVA Animal Welfare Foundatiion:

Part 1

The aim of this part of the study was to determine the prevalence of FCGS in the vet-visiting cat population. This work has now been published in the Journal of Feline Medicine and Surgery and the abstract and reference are below.

Healey KA, Dawson S, Burrow R, Cripps P, Gaskell CJ, Hart CA, Pinchbeck GL, Radford AD, Gaskell RM. Prevalence of feline chronic gingivo-stomatitis in first opinion veterinary practice.
J Feline Med Surg. 2007 Oct;9(5):373-81. Epub 2007 May 15.

Feline Chronic Gingivo-Stomatitis (FCGS) is a syndrome characterised by persistent, often severe, inflammation of the oral mucosa. In the absence of similar studies, our objective was to establish the prevalence of FCGS in a convenience based sample of cats visiting first opinion small animal veterinary practices. Twelve practices took part, providing a sample population of 4858 cats. Veterinary surgeons identified cases of FCGS according to our case definition over a twelve week sampling period; age, sex and breed information was determined for all cats, plus brief descriptive data for FCGS cases. The prevalence of FCGS was 0.7% (34 cases, 95% confidence intervals: 0.5% to 1.0%). Of the 34 cases of FCGS, 44% (13 cats) were new cases and 56 % (19 cats) were ongoing cases. No statistically significant difference was found when the age, sex and breed of cats with FCGS was compared to data from cats without the condition.

Part 2

The aim of this part of the study was to determine and quantify possible risk factors for FCGS in cats. This comprised a case control study carried out at veterinary practices.

A case definition was set for inclusion of a case into the study and practices were visited to ensure compliance. Vets were asked to enrol three controls for every case seen, one of which was being blood sampled for another reason. Questionnaires were completed for each case and control and owner consent obtained. Oropharyngeal swabs were collected and sent to the laboratory for attempted isolation of feline calicivirus, feline herpesvirus, *Mycoplasma* spp., *Pasteurella* spp., *Bordetella bronchiseptica* and *Bartonella henselae*. Blood samples were collected from cases and one of the controls and assessed for haematological and biochemical parameters and feline leukaemia virus and feline immunodeficiency virus status. Blood samples are also being analysed for feline leucocyte antigen (FLA) genetic make-up.

Forty eight cases and one hundred and four control cats were enrolled on to the study. Laboratory work has been completed for the biochemical, haematological and microbiological parameters; the FLA work at the University of Manchester is nearing completion. Demographic and clinical/microbiological data has been entered on the data base, and analysis of risk factors for FCGS in the vet-visiting population of cats is currently being carried out.

Part 3

The aim of this part of the study was to determine and quantify possible risk factors for FCGS in cats. This comprised a case control study carried in pedigree cat households.

Private pedigree cat households were enrolled on to this study with assistance from the Cat Welfare. Owners were made aware of the project via a display at the Supreme Cat Show and through pedigree club literature. Households enrolled were then visited where assessment was made of the potential cases. Prior to all visits vets were contacted to ensure they were happy with the University visiting their client. During the visit questionnaire data was collected and oropharyngeal swabs were taken for microbiological assessment and FLA analysis.

In total 241 cats were sampled and of these 31 fitted the case definition. Cats sampled were from 20 different breeds with higher numbers from Maine Coon, Siamese, Burmese, British, Birman, Oriental Ragdoll and Russian Blue breeds. Demographic and clinical/microbiological data has been entered on the data base, and analysis of risk factors for FCGS in the pedigree cat population is currently being carried out.