

THE CHEMISTRY OF CATS: ALLERGIES, CATNIP, AND URINE

WHAT CAUSES ALLERGIES TO CATS?



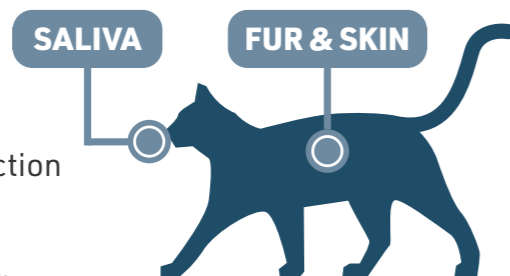
10-30% OF PEOPLE ARE ALLERGIC TO CATS

Eight different cat allergens are currently recognised by the World Health Organisation. They're designated as Fel d 1-8. Of these, Fel d 1 is the primary cat allergen.

FEL D 1 MAIN ALLERGEN

A protein, the biological function of which is still unknown.

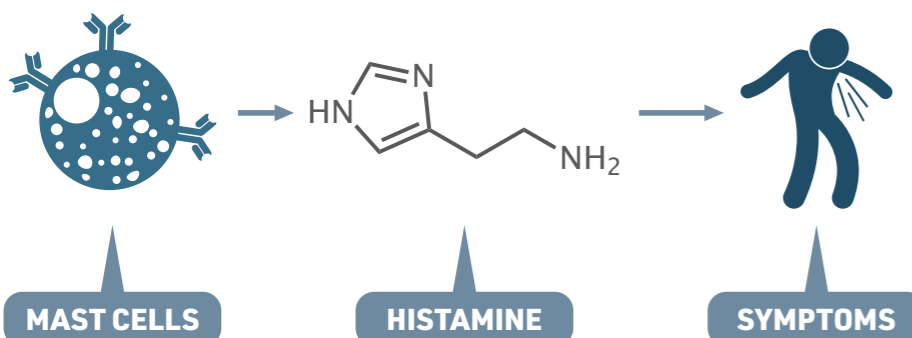
Found in over 99% of homes.



♂ FEL D 1 LEVELS > ♀ FEL D 1 LEVELS

(note: neutered males produce Fel d 1 levels similar to those of females)

Inhalation of Fel d 1 causes an immune response in people who are allergic. As a defence mechanism, the body produces antibodies. The antibodies trigger the release of histamine from mast cells. Histamine causes the symptoms of allergies.



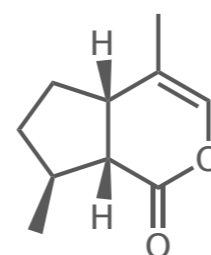
MAST CELLS

HISTAMINE

SYMPTOMS



WHY DO CATS GO CRAZY FOR CATNIP?



NEPETALACTONE

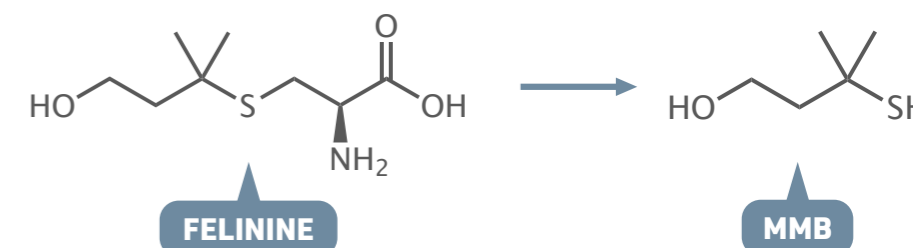


70% OF CATS ARE AFFECTED

The compound that causes catnip's effect on cats is nepetalactone. It binds to protein receptors in the cat's nasal passages. This triggers responses in the cat's brain that make the cat exhibit behaviour similar to that triggered by cat pheromones, including rolling, rubbing and salivating. The effects last for around ten minutes before wearing off.

WHY DOES CAT URINE SMELL SO BAD?

Fresh cat urine doesn't have a strong odour. However, over time, it develops a strong smell. Felinine, an amino acid in cat urine, gets broken down by enzymes into 3-methyl-3-sulfanylbutan-1-ol (MMB). This, along with the ammonia produced by the breakdown, gives cat urine its pungent smell.



♂ FELININE EXCRETION > ♀ FELININE EXCRETION

(note: neutered males excrete felinine at levels similar to that of females)



Cat ketone (4-methyl-4-sulfanylpentan-2-one) is another key cat urine odorant. It also occurs naturally in Sauvignon grapes, and is a key contributor to the odour of blackcurrants.



CAT LITTER COMPOSITION

Clay-based, e.g. calcium bentonite; biodegradable and silica gel litters are less commonly used.

Cat litter absorbs urine and odours. In cases where cats urinate elsewhere around your house, enzymatic cleaners should be used. These break down odorous compounds.

