

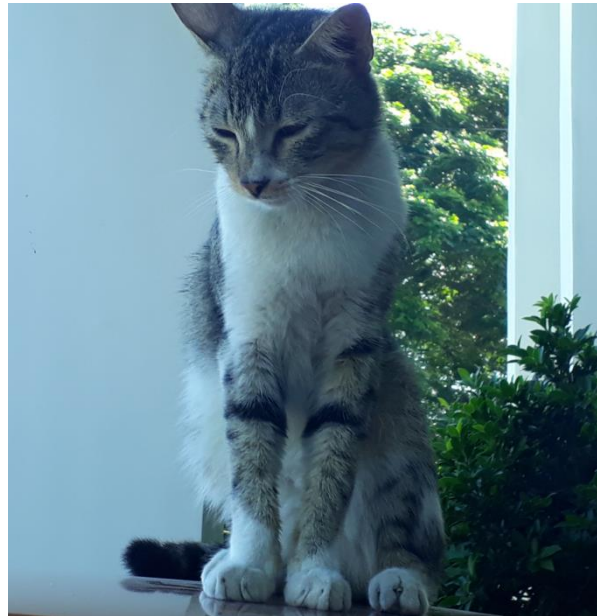
Cat Allergy

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Scientific name: *Felis domesticus*

Description:

Cats are small, furry domesticated carnivorous mammals chosen as pets and for its skill to hunt rodents. Allergy to cats is the most common mammalian-origin allergy in humans affecting 1 in 5 adults worldwide.^{1,2} The allergens they produce are present throughout indoor environment of houses, buildings, or workplaces.³



The major cat allergens are Fel d 1, a secretoglobulin and not a lipocalin, and Fel d 4.^{4,5} The sources of allergens are salivary, sebaceous and perianal glands.⁴ Cat's allergen is lighter than dog's allergen. Cat's allergen is among the tiniest and stickiest allergen molecules enabling it to be transferred to environment with no exposure to cat, measuring roughly one-tenth the size of a dust allergen. Sixty percent (60%) of airborne Fel d 1 is carried by small particles, of which 75% are more than 5 microns in diameter and twenty-five percent (25%) less than 2.5 microns.⁶ The microscopic size of these molecules allows them to stay airborne for much longer time than most other allergens. This, in turn, makes them easy to inhale, causing an allergic reaction.

Avoidance measures:

1. Remove the pet from the home^{3,7,8}
2. Regularly wash the pet^{7,9}
3. Keep the pet out of the bedroom^{3,10,11}
4. Use air purifier with HEPA filters¹²
5. Regularly use high-efficiency vacuum cleaners³
6. Use covers and cases for mattresses and pillows^{3,13}
7. Remove pillows and other items that may act as a reservoir³
8. Use bleach and tannic acid¹⁴
9. Apply topical lotions (as recommended by your local veterinarian) to the pet cat to encapsulate the allergens on the fur of the animal that lives with patients.¹⁵ Lotions bind and reduce cat allergens in your home. It is advisable to combine several of these measures, as individual measures may not be effective.^{3,15,}

Although removing the animal from the home is the most commonly recommended measure, it may be very difficult for patients to agree to this because they love their pets. Focusing on decreasing exposure to allergens while keeping the pet at home, although less effective, can be more practical.

References:

1. Morris DO. Human allergy to environmental pet danders: a public health perspective. *Vet Dermatol* 2010;21:441-9. doi: 10.1111/j.1365-3164.2010.00882.x
2. Bousquet PJ, Chinn S, Janson C, Kogevinas M, Burney P, Jarvis D, et al. Geographical variation in the prevalence of positive skin

tests to environmental aeroallergens in the European Community Respiratory Health Survey I. *Allergy* 2007;62:301-9. doi: <https://doi.org/10.1111/j.1398-9995.2006.01293.x>

3. Portnoy J, Kennedy K, Sublett J, Phipatanakul W, Matsui E, Barnes C, et al. Environmental assessment and exposure control: a practice parameter--furry animal. *Ann Allergy Asthma Immunol* 2012; 108(4), 223.e1–223.15. doi: [10.1016/j.anai.2012.02.015](https://doi.org/10.1016/j.anai.2012.02.015)

4. Matricardi PM, Kleine-Tebbe J, Hoffmann HJ, Valenta R, Hilger C, Hofmaier S, et al. EAACI molecular allergology user's guide. *Pediatr Allergy Immunol*. 2016;27(Suppl 23):1-250. doi: [10.1111/pai.12563](https://doi.org/10.1111/pai.12563)

5. Bonnet B, Messaoudi K, Jacomet F, et al. An update on molecular cat allergens: Fel d 1 and what else? Chapter 1: Fel d 1, the major cat allergen. *Allergy Asthma Clin Immunol* 2018; 14:14. doi: [10.1186/s13223-018-0239-8](https://doi.org/10.1186/s13223-018-0239-8)

6. Luczynska C. Airborne concentrations and particle size distribution of allergen derived from domestic cats (*Felis domesticus*). Measurements using cascade impactor, liquid impinger, and a two-site monoclonal antibody assay for Fel d I. *Am Rev Respir Dis*. 1990;141:361–7. doi: [10.1164/ajrccm/141.2.361](https://doi.org/10.1164/ajrccm/141.2.361)

7. Butt A, Rashid D, Lockey RF. Do hypoallergenic cats and dogs exist? *Ann Allergy Asthma Immunol*. 2012;108:74-76. doi: [10.1016/j.anai.2011.12.005](https://doi.org/10.1016/j.anai.2011.12.005)

8. Kilburn S, Lasserson TJ, McKean M. Pet allergen control measures for allergic asthma in children and adults. *Cochrane Database Syst Rev*. 2003;2001(1):CD002989. doi: [10.1002/14651858.CD002989](https://doi.org/10.1002/14651858.CD002989)

9 Custovic A, Simpson A. The role of inhalant allergens in allergic airways disease. *J Investig Allergol Clin Immunol*. 2012;22:393-401.

10. Crocker DD, Kinyota S, Dumitru GG, Ligon CB, Herman EJ, Ferdinands JM, et al. Effectiveness of homebased, multi-trigger, multicomponent interventions with an environmental focus for

reducing asthma morbidity: a community guide systematic review. *Am J Prev Med.* 2011;41:S5-S32. doi:10.1016/j.amepre.2011.05.012

11. Custovic A, Green R, Fletcher A, Smith A, Pickering CA, Chapman MD, et al. Aerodynamic properties of the major dog allergen Can f 1: distribution in homes, concentration, and particle size of allergen in the air. *Am J Respir Crit Care Med.* 1997;155:94-98. doi: 10.1164/ajrccm.155.1.9001295

12. Wood RA, Johnson EF, Van Natta ML, Chen PH, Eggleston PA. A placebo-controlled trial of a HEPA air cleaner in the treatment of cat allergy. *Am J Respir Crit Care Med.* 1998;158:115-120. doi: 10.1164/ajrccm.158.1.9712110

13. Krouse HJ. Environmental controls and avoidance measures. *Int Forum Allergy Rhinol.* 2014;4(Suppl 2):S32-S34. doi: 10.1002/alr.21383

14. Barnes CS, Kennedy K, Johnson L, Forrest E, Gard L, Pacheco F, et al. Use of dilute sodium hypochlorite spray and home cleaning to reduce indoor allergen levels and improve asthma health parameters. *Ann Allergy Asthma Immunol.* 2008;101:551-552. doi: 10.1016/S1081-1206(10)60297-9

15 Davila I, Dominguez-Ortega J, Navarro-Pulido N, Alonso Antolin-Amerigo D, Gonzalez-Mancebo E, et al. Consensus document on dog and cat allergy. *Allergy* 2018; 73: 1206-1222. doi: 10.1111/all.13391