Allergies: What Causes Scratching (The Pruritic Threshold)

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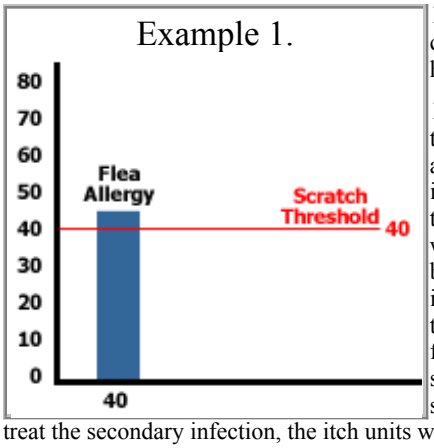
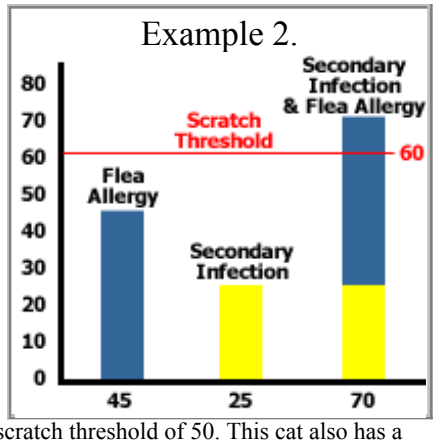
Dr. Craig Griffin, an international authority on dermatology in small animals, provides a helpful educational tool to use in understanding allergies and scratching. This is a very simplified description of a very complex disorder, but it may help you understand why some pets with allergies scratch at worse times than others. Scratching is the result of a cumulative effect of many factors.

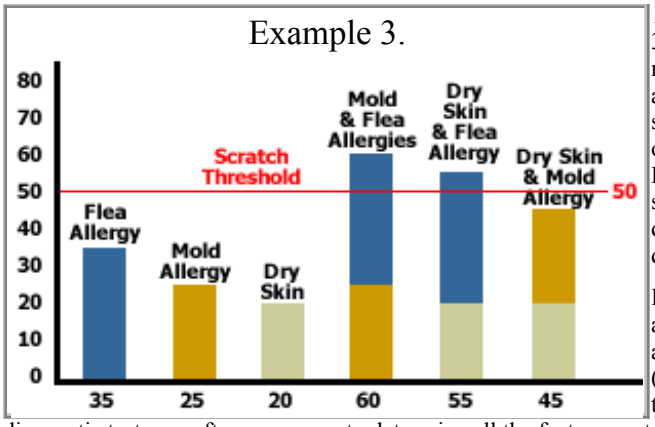
Pruritis (itching) can be due to a number of factors such as allergies, secondary infections, and dry skin. Imagine there is a way to measure the ability of a condition to cause itching in theoretical "itch units." "Let us also imagine that there is a "scratch threshold." If the number of "itch units" exceeds that threshold, the animal will start scratching.



In Example 1, the dog has a scratch threshold of 40. His allergy to fleas contributes 45 itch units. Thus, that allergy alone would cause him to itch. Unless his allergy is treated effectively, he will continue to scratch.



In Example 2, the cat's scratch threshold is 60. This cat has a mild allergy to fleas, which contributes 45 itch units. This is below the threshold, so the flea allergy alone, will not make him itch. A secondary bacterial infection would result in 25 itch units, which is also below the threshold. However, if the cat has fleas and then develops a secondary skin infection, the cat will start to scratch. If we remove the fleas **or** treat the secondary infection, the itch units will return to a level below the threshold, and the cat will no longer scratch.



In Example 3, a cat has a scratch threshold of 50. This cat also has a mild allergy to fleas, at 35 itch units. This cat is also allergic to mold, which would contribute 25 units. A dry skin condition in this cat would contribute 20 units. None of the conditions alone, will cause the cat to scratch. However, if the cat is exposed to fleas and mold, she will start to scratch. She will also start to scratch if she develops dry skin and has fleas. She will not scratch if she develops dry skin and is only exposed to mold.

In summary, primary causes of pruritis may include atopy, flea allergies, food allergies, or even mites. There are secondary factors such as stress, dry skin, pyoderma (bacterial infection), or yeast infection which can increase the pruritis. For any animal that is scratching, multiple diagnostic tests are often necessary to determine all the factors contributing to the pruritis.

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