Allergies - the clinical picture, diagnosis, and treatments

1.□What is an allergy?□□什么是过敏？

□□□□□□□□□□□□□□□An allergy is an immunologic response to foreign substances in foods or in the environment.□These substances, allergens, are usually tolerated by normal individuals.□The clinical manifestations of allergies are the visible end results of the body’s response to allergens.□This response is considered a form of hypersensitivity, which can cause profound discomfort for animals and serious angst for owners.□过敏是一种对食物中或环境中外来物质的免疫反应。这些物质，过敏原通常可以被正常　　动物耐受。临床上所见的过敏是可见的身体对过敏原反映的最终结果。这种反映被认为是一种超敏反应，这种反应能造成动物的严重不适以及宠物主人的严重焦虑。

2.□What are the signs of an allergy? 过敏的症状有哪些？

DOGS: 狗：

- □□□□□□□Itching (pruritus—not spelled “pruritis”… there is no “-itis” of the “pru”.)□Recognize that licking, scratching, and chewing are all possible signs of itching.
- □□□□□□□Redness (erythema)- commonly of the skin of ears, axillae, groin, belly, and feet.
- □□□□□□□Infections- either of the skin or the ears.□Infections are commonly

thought to be secondary to skin inflammation and self-trauma.□In fact, allergic dogs often have a poor skin barrier to protect them from elements and commensal (normal resident) bacteria and yeast.□Increased trans-epidermal water loss is a manifestation of this inadequate skin barrier function.□In animals with recurrent infections, one must consider an underlying allergy as a potential cause.

- □□□□□□Fur mowing:□The symmetrical barbering of the fur on belly, flanks, or limbs.□Usually, these cats do not traumatize the skin itself.□

- □□□□□□Eosinophilic granuloma complex: This category includes eosinophilic (often linear) granulomas, plaques, and indolent ulcers.

- □□□□□□Miliary dermatitis:□A term applied to a "cutaneous reaction pattern" that has many possible causes including flea-bite hypersensitivity, ringworm, staphylococcal folliculitis, and allergies.□The term describes multiple small crusted papules that spontaneously develop on the skin.□These are often felt as the client pets the cat.□Early on, without secondary infections or other trauma, these lesions are impossible for the cat to create itself.□Cytology (which is often difficult to achieve) often reveals numerous eosinophils.

- □□□□□□Symmetrical pruritus:□This is often seen as the cat that creates significant lesions on the face and neck.□Secondary infection is common in this form of allergies.
- □□□□□□Atopics usually start off with a seasonal pruritus, but 80% of atopics develop a year round disease.□This makes sense since they are pre-programmed to become allergic to their environment.
- □□□□□□Atopy gets worse in time, and dogs/cats do not outgrow their allergies. 遗传性过敏会随着时间变得更加严重，并且狗/猫无法压制过敏。
- □□□□□□Common dog breeds:□Labs, Goldens, Pitbulls, Bichons, Shih-Tzus, Jack Russells, Westies, Shar-Peis, Shepherds, Spaniels, etc…□And, mongrel dogs too.□

- □□□□□□Age of onset:□Dogs usually 1-3 years of age.□Generally, signs start no later than 6 years old in dogs.□Cats can "start" with signs a little later in life-- 1-8 years old.□
- □□□□□□Atopics will respond to appropriate steroid dosages (dogs: 1 mg/kg prednisolone daily) if there is not concurrent infection, food allergy, or ectoparasitism (fleas, scabies, cheyletiellosis).
- □□□□□□Atopy is often strongly suggested by a history with a seasonal pruritus.□However, it should be a diagnosis of exclusion and we only allergy test once we know the diagnosis of atopy.
- □□□□□□Allergens incite atopic dermatitis transdermally, orally, and maybe via inhalation.□The transdermal component is important as dogs and cats live on the ground and do not wear shoes, etc…
- □□□□□□Food allergens are usually proteins or glycoproteins in foods.□Common allergens are meats, wheat, corn, soy, dairy.□However, theoretically anything ingested can be a food allergen.

- □□□□□□An animal must eat the inciting allergen for some time before developing an allergy.□Many clients say “he has eaten the same food for years, he can’t be allergic to it”.□This is actually a necessary scenario and dogs/cats can develop food allergens at any point in life for no apparent reason.□
- □□□□□□Food allergens must be considered in a year-round itchy dog/cat that develops signs later in life.□□As previously mentioned, atopy is a genetic condition and the signs start in relatively young adults.□Atopy does not start late in life.
- □□□□□□Food allergies may or may not respond to appropriate dosages of steroids.□Since uncomplicated atopy will respond to steroids, we must consider a food allergy in a dog that does not respond.□
- □□□□□□There are no reliable blood tests for food allergies.□Serologic tests looking for IgE against food allergens are inaccurate and even misleading.□

- □□□□□□A properly performed home cooked elimination diet trial is the only 100% accurate “test”.□□These are designed once we know the current or previously eaten ingredients.□Food allergics should improve within 4 weeks of removing the inciting ingredient.□However, it may take 12 weeks to see maximal benefit since the allergic immune system takes time to normalize.
- □□□□□□Commercially available “novel protein” or “hydrolyzed” (chemically chopped up into smaller pieces) diets have a 10-15% failure rate.□This is true even if the bagged diet is chosen based on current/previous ingredients.□Ingredients get pretty similar as you look down the list (fish oil, pork fat, etc…).
- □□□□□□Watch out for terms like “animal digest” or “meat-by-product” or “fish-meal.”
- □□□□□□Thankfully, dogs and cats very rarely develop allergies against an effective novel protein diet.□
- □□□□□□Shampoos:□Appropriate high quality shampoos increase the hydration of the stratum corneum (outer skin layer) and improve the skin barrier.□Shampoos are a very effective vehicle for antimicrobial agents.□Shampoos can contain anti-pruritic agents (colloidal oatmeal, hydrocortisone, pramoxine, etc…).□□Shampoos also help remove topical allergens through a simple cleaning action.□Shampoos are obviously not a great option for cats.
- □□□□□□Antihistamines (and other nonsteroidal agents):□Antihistamines can reduce the action of histamine on a receptor level (H1) and reduce the release the histamine.□They are better at preventing pruritus and are not good at removing pruritus.□As such, we commonly use steroids to “put out the fire” and then we can see if the antihistamine can keep the animal comfortable.□If they help, then they are given routinely at the appropriate dosage interval.□Antihistamines can have a steroid sparing effect and they are often used together.□Nonsedating antihistamines (Claritin, Seldane, etc…) are not as effective as the sedating types (deiphenhydramine, chlorpheniramine, hydroyzine, clemastine).□Amitriptylline (a Tri-Cyclic Antidepressant) has potent antihistaminic properties, is cheap, administered twice daily, and may help dogs with anxiety.□Pentoxifyline (a methylxanthine derivative) works in a different manner but helps up to 30% of atopics.□Antihistamines can be very effective in cats.

- □□□□□□Omega Fatty Acids:□Certain omega fatty acids can lead to anti-inflammatory prostaglandins and leukotrienes.□To achieve this result, the ratio of Omega 6's (e.g. certain vegetable oils) to Omega 3's (e.g. fish oils) is very important and should be between 10:1 or 5:1.□Supplements (DermCaps□, etc…)can help to achieve this goal, but it is easier/cheaper to have a diet with the ideal types/quantity/ratio of omega FA's.□Eukanuba□dog foods have been studied repeatedly and have consistent and high quality omega FA's.
- □□□□□□Steroids:□We use short acting steroids (pred family) when necessary to control itching.□Prednisolone is ideal for cats and we often use this over plain prednisone in dogs too.□We do not want to use more than 0.5 mg/kg prednisolone every other day long term as it has many side effects (Cushings, elevated liver enzymes, immunosuppression, polyuria/polydipsia).□Methylprednisolone is 20% more potent than prednisolone, but has minimal mineralocorticoid properties and is well tolerated by older patients.□DepoMedrol (methylprednisolone acetate) is a reasonable option for cats that are difficult to pill.□The shots can last over 2 months, but should not be used as a sole treatment for atopy if more than 2-3 shots are needed annually.□
- □□□□□□Cyclosporine (Atopica□):□A very expensive option when needed every day (about $8-9 for the average Labrador!).□Perhaps 70% of animals improve when dosed daily.□This 70% is not completely "cured" and may only have less erythema or partial improvement in pruritus.□If daily therapy works, then we try to go to every other or even every third day.□□With each drop in frequency, you can expect to lose control in □the animals that improved.□It is a good option for cats (due to efficacy and cost reasons), BUT… they must be Toxoplasma gondii titer negative or they may develop fulminant toxoplasmosis and die.□

- □□□□□□What about allergy shots?....那么脱敏针呢?
- □□□□□□Allergy testing is available as serologic and intradermal skin test (IDST) options.□Both have pro's and con's.□(No steroids allowed for either testing scheme.□Sedation only needed with IDST.□Antihistamines and omega fatty acids ok for serology).□
- □□□□□□Serologic allergy testing (VARL, HESKA, Greer) looks at species specific IgE's against environmental allergens.□False positives or negatives are possible as blood antibodies may not correlate with the antibodies in the skin.□ Allergy shots based on serology can work in 2/3 of dogs, and this is about the same success rate as allergy shots based on skin testing.□
- □□□□□□IDST should not have false positive results, but can have false negative results.□Only well trained/experienced clinicians should perform/interpret IDST.□
- □□□□□□Either serology or IDST alone can explain the itching pattern in 75% of cases.□We often need to use both tests to best explain an animal's seasonality or lack thereof.□ASIT based on both tests combined may have the best results.□

- □□□□□□ASIT is giving purified, sterile (but fairly crude) allergen extracts subcutaneously.□We are giving way more of an allergen than they would normally encounter, but it is via a different route (SQ).□Theoretically, this exposure

should drive the Th2 response (hypersensitivity) toward a Th1 response (tolerance).□

- □□□□□□Initially, a dilute and small quantity is given, and then shot gradually build up to more concentrated and more volume of shot.□
- □□□□□□The most common side effect is increased itching, and this usually indicates that we are giving too much allergen (at least once at a maintenance dosage).□
- □□□□□□A common scenario is that the shots provide a palliative effect, but this wears off before the next shot is due.□This indicates that the interval may need to be shorter.
- □□□□□□Shots make 1/3 dogs great on shots alone, 1/3 dogs better (still need medicines, but generally need less steroids), and just do not work in 1/3 of dogs.□

- □□□□□□It takes a full year to see maximal benefit from the shots.

□□□□□发痒（搔痒症）

添，抓，咬的现象都可能是发痒的症状，

发红（红斑）-通常在耳部，腋窝，腹股沟，腹部以及脚部的皮肤。

□□□□□□□□□□□□□□□NOTE:□The hallmarks of allergic dogs are the above signs without primary skin lesions.□In other words, by definition, they commonly have an “itch that rashes” and not a “rash that itches”.□However, the latter scenario must be ruled out and addressed as skin infections (yeast or bacterial) often exacerbate pruritus.□

备注：以上过敏狗的症状特征出现在没有主要皮肤损伤的情况下。换句话说，根据定义，它们通常是“痒得发红”而不是“红得发痒”。然而，后者必须被排除并解决，因为皮肤感染（酵母或细菌）通常会加重搔痒症。

感染-皮肤或耳朵。感染通常被认为是皮肤发炎以及自创伤的后续反应。实际上，过敏的狗通常的皮肤屏障较差，难以防御一些元素及正常菌群。增加的皮内水分的流失是皮肤防御功能不足的表现。对于有复发感染的动物，需要考虑潜在过敏作为可能的原因。

CATS:□Four common presentations of cat allergies.

猫：四种常见的猫过敏的症状。

脱毛：腹部，腰窝，或四肢对称式脱毛。通常，这些猫不会自己损伤皮肤。

嗜酸性肉芽复合体：这一种类包括嗜酸性肉芽（通常线型）噬菌斑，和无痛型溃疡。

□□□□□粟粒型皮肤炎：此病名指一种“皮肤反应形态”，有多种可能原因，包括对跳骚叮咬的超敏反应，环癣，葡萄球菌毛囊炎，以及过敏。病名描述随机在皮肤上生出的多个硬壳小丘疹。通常在畜主抚摸猫的时候被感觉到。在早期，没有后续感染或其他创伤，这些损伤不太可能是由猫自己造成的。细胞学（很难做到）通常显示众多的嗜酸性细胞。

对称搔痒症：这种情况通常是猫在脸部及颈部造成显著的伤口。后续感染在这种过敏中很常见。

1.□What is atopy? 什么是遗传性过敏?

□□□□□□□□□□□□□□□Atopy is generally defined as a genetically pre-programmed condition that promotes the development of antibodies (IgE, IgGd) against normally innocuous environmental allergens
(pollens, dusts, danders, mites), and the subsequent cutaneous signs (redness, itching) upon exposure to those allergens.

□□□□□□□□□□遗传性过敏通常被定义为一种促进抗正常无害环境抗原（花粉，灰尘，皮屑，虱子）抗体（ IgE,IgGd）产生的由遗传基因预先编码决定的情况，以及在暴露给抗原之后的后续皮肤症状（发红，发痒）。

□□□□□□□□□□□□□□T-lymphocytes are essential in the regulation of the immune system.□ Helper-T cells have different roles and produce different cytokines.□Th-1 cells generally promote tolerance, whereas Th-2 cells are thought to promote hypersensitivity reactions (typified by production of IgE).□Atopic animals have an imbalance in this system, and this is a hotbed of current research.

□□□□□□□□□□□□□□淋巴细胞对免疫系统的调节至关重要。辅助T细胞有不同的功能并且产生不同的细胞素。 Th-1细胞通常促进耐受能力，而 Th-2细胞被认为促进超敏反应（通常通过产生
IgE
）。遗传性过敏的动物在此系统中出现了不平衡，这是现今研究的一个热门。

遗传性过敏通常开始于季节性的搔痒症，但80%的遗传性过敏会发展成全年性的疾病。这样是有道理的因为它们的预先编码决定了对它们所处的环境过敏。

常见狗品种：拉布拉多，金毛，斗牛，比熊，西施，杰克罗素，西高地，沙皮，牧羊犬等，还有混血狗。

发病年龄：狗通常在1-3岁。通常，狗的病症在6岁前显现。猫可能会开始的晚一些—1-8岁大。

如果没有混合感染，食物过敏，或外寄生虫（跳骚，疥螨，姬螯螨），遗传性过敏会对适量的类

固醇有一定的反应（ 狗：
1mg/kg
去
氧
氢化可的松
）。

遗传性过敏通常的前兆是季节性搔痒症史。然而，需要进行排除检测并且我们只需要一次过敏测试以确诊遗传性过敏。

过敏原会通过皮肤，口腔，以及呼吸激起遗传性过敏皮肤炎。皮肤的途径尤为重要因为狗和猫都生活在地上且不穿鞋,等…

2.□Food allergies?□What’s the deal? 食物过敏? 是什么?

□□□□□□□□□□□□□□The signs of food allergies or atopy can be very similar.□Also, both conditions can be present in probably 10-20% of allergic pets.□□As such, if an animal has signs of an allergy that is at least partially present at all times of the year, then a food allergy should be ruled out.□Food allergies must be considered in an animal that is itchy very young in life (< 4-6 months).□This makes sense since the immune system of an atopic takes some time before it can develop an allergy to the environment—at least 6 months, but usually 1-2 years.□Young animals often have internal parasites or viral GI diseases that promote a “leaky” gut mucosal barrier.□

□□□□□□□□□□□□□食物过敏或遗传性过敏的症状可能非常相似。并且，在10-20%的过敏的猫中，两种情况都可能表现。这样，如果动物过敏的症状在全年至少有部分表现，那么可以排除食物过敏。对于动物在年轻时（
<4-6
个月）开始发痒，
那么食物过敏应給予认真考虑。这是有道理的，因为遗传性过敏的免疫系统需要一些时间去对环境产生过敏反应—至少
6
个月，

但通常1-2年。年轻的动物通常有体内寄生虫或病毒性肠胃疾病促进“渗漏”的肠子产生一层粘

液性的屏障。

□□□□□□□□食物过敏原通常是食物中的蛋白或糖类蛋白。常见的过敏原是肉类，小麦，玉米，黄豆，奶制品。然而，理论上任何可被消化的东西都可能是过敏原。

□□□□□□□一只动物必须经过一段时间食用有激发作用的过敏原才可能产生过敏。许多客人说“他已经吃同样的食物很多年了，他不可能对它过敏”。这其实是一种必然的情况并且狗 / 猫可能在没有任何原因的情况下，在生命的某一时期产生食物过敏。

□□□□□□□□食物过敏原需要被考虑如果狗/猫全年发痒并且在生命的晚些时候产生了过敏症状。像之前所说的，遗传性过敏是一种遗传基因疾病并且并正在相对年轻的成年期开始显现。遗传性过敏不会在生命的晚期发作。

□□□ □□□适当剂量的类固醇可能会也可能不会对食物过敏有作用。因为类固醇对非复杂型的遗传性过敏有作用，我们也应该考虑对食物过敏的狗是不会有作用的。

□□□□□□□□没有可靠的检测食物过敏原的血液检查。检测抗食物过敏原的IgE的血清测试是不准确甚至有误导作用的。

□□□□□□□一个正确操作的家庭饮食排除法实验是唯一100%准确的“检测法”。我们可以在了解现今或之前食物成分后进行设计。食物过敏会在去除刺激性成分后
4
周得以改进。然而，可能要花
12
周得到最好效果因为过敏的免疫系统需要时间去恢复正常。

□□□□□□□□市场上供应的“新蛋白”或“水化”（化学上被碎成更小的小片）食谱有10-15%的无败率。即使袋装的食谱是基于现今
/
之前的成分。当你仔细看列表时，会发现成分是非常相似的（鱼油，猪油，等等
...
）。

□□□□□□□□小心例如“被化解/酵解动物”或“内脏器官”或“鱼餐”这类的词。

□ □□□□□□□□□□□□庆幸的是，狗/猫很少会对有效的新蛋白食物产生过敏。

3. □Atopy Treatment Options: 遗传性过敏治疗选择：

□□□□□□□□□□□□□□□Treating atopic animals often requires a multi-faceted approach. □The goal of all therapies is to achieve a level of “tolerable” itch and/or reduce the secondary infections. □□Tolerable is a relative term and is different for certain animals and certain clients. □A Bichon may have a lower threshold and more severe symptoms than a Labrador. □□We can remove all pruritus with higher dosages of steroids, but this is not compatible with a long healthy life. □If we need to use steroids, we strive to achieve the lowest dose possible on no more than an alternate day basis. 治疗遗传性过敏动物通常需要多方面的手段。所有疗法的目标是达到一种“可忍受的”痒和 /或减少后续感染的水平。可忍受的是一个相对的名词并且对以某些动物和客人会难定义。一直比熊与一只拉布拉多相比可能会对痒较不敏感但却病得更严重。我们用较大剂量的类固醇去除所有搔痒，但这对长期的身体健康不利。如果我们需要使用类固醇，我们应经可能的使用最小剂量，不多于隔日使用。

□□□□□□□□香波：适当的高品质香波增加角化层（外皮肤层）的含水量并增强皮肤屏障。香波是一种抗微生物药物的非常有效的载体。香波含有防搔痒药物（胶体燕麦，氢化可的松，普莫卡因，等等 ...）。香波也能通过简单的清洗帮助去除局部过敏原。香波对猫来说显然不是一个理想选择。

□□□□□□□□抗组胺剂（以及其他非固醇类药物）：抗组胺剂可以降低组氨酸对H1受体水平的作用并且降低组氨酸的释放。它们的优势在于预防搔痒而不是祛除瘙痒。这样，我们通常用类固醇去“灭火”，然后使用抗组胺剂看是否能让动物保持舒适。如果它们有作用，可以将它们作为常规药在适当的剂量间隔给药。抗组胺剂有对类固醇的补给作用并且它们可以被同时使用。非镇静型抗组织胺剂（克敏能

,

特非那丁

,

等等

...

）不如镇静型有效（
deiphenhydramine, chlorpheniramine, hydroyzine, clemastine
）。阿米替林（一种三环抗忧郁剂）有强抗组胺酸的性质，很便宜，每日两次，并且可能帮助狗的焦躁症。
己酮可可碱
（一种甲基黄嘌呤衍生物）通过一种不同的方式发挥作用但可以帮助缓解30%的遗传性过敏）。抗组胺剂对猫非常有效。

□□□□□□□□ω氨基酸：某些ω氨基酸可能造成抗发炎前列腺素和白细胞三烯的产生。为了达到这个效果，ω 6（例如，某些植物油）对ω3（例如，鱼油）的比例十分重要并应该在 10：1或5：1。保健品（DermCaps□
，等
...
）能帮助达到这个目标，但一个有理想种类
/
数量
/
比例的ω氨基酸的食谱会更为简单
/
便宜。多次调查显示优卡
□
狗粮有稳定且高质量的ω氨基酸。

□□□□□□□□类固醇：在可能的情况下，我们使用短作用类固醇（pred家族）。去氢氢化可的松是用于猫的理想药物并且对于狗我们也使用它代替单独的
去氢可的松
。我们不想在隔天的基础上长期使用多于0.5mg/kg
去氢氢化可的松。
甲基氢化泼尼松
要比
去氢氢化可的松强效
20%
，但有微小的盐皮质激素性质并且可以很好的被年纪大的病人耐受。
DepoMedrol
（
醋酸甲基氢化泼尼松
）是一种给猫的合理选择但难成片剂。针剂给药可以持续
2
个月以上，但不应该被当作遗传性过敏的唯一疗法如果每年需要多于
2-3
针。

□□□□□□□□环孢霉素（Atopica□）：一种非常昂贵的选择当需要每天给药（大约对拉布拉多平均$8-9
）。大约
70%
在每天给药后病情有了改善。这
70%
没有完全“治愈”并且可能只有红斑的减少或搔痒症的部分改进。如果逐一减少频率，有
1/2
有改进的动物会失去控制。对猫是一个好的选择（因为功效和花销的原因），但是
...
他们必须是鼠弓形体滴定阴性否则可能引发暴发性弓形体并致死。

4.□Allergy testing and allergen specific immunotherapy (ASIT or “allergy shots”):
过敏测试以及过敏原特异性免疫疗法（ASIT或“脱敏针”）。

□□□□□□□过敏测试有血清及皮下（IDST）两种可选择形式。两种都有利有弊。（两种测试都不能使用类固醇。 IDST需要使用镇静剂。血清测试可以使用抗组胺剂以及ω氨基酸）。

□□□□□□□血清学过敏测试（VARL, HESKA, Greer）检测物种特异性IgE所抗的环境抗原。假阳或假阴在血液抗体与皮肤抗体不符是可能出现。依据血清学结果的脱敏针对
2/3
的狗起作用，这个成功几率与皮试为依据的脱敏针大致相同。

□□□□□□□IDST不应有假阳性结果，但可能有假阴性结果。只有训练有素/经验丰富的医师才能实施 /解读IDST。

□□□□□□□单独的血清学测试或IDST可以解释75%有发痒症状的病例。我们通常需要两个测试以最好的解释动物的季节性或非季节性的症状。基于两种测试结合的
ASIT
可能会有最好的结果。

ASIT是皮下注射经纯化的，灭菌的（但相当天然的）抗原提取物。我们给予比他们平时接触量要多很多的过敏原，但通过不同的途径（皮下）。理论上，这种暴露会促使 Th2反应（超敏）转化为 Th1反应（耐受）。

□□□□□□□□起初，给予一个稀释的小剂量，然后逐渐增大针剂的浓度和剂量。

□□□□□□□□最常见的副作用是发痒的增加，并且者通常说明我们给的过敏原过多（至少一次维持剂量）。

□□□□□□□一个常见的情况是打针会有减轻的作用，但在打下一针时作用会消失。这说明打针的间隔需要减短。

□□□□□□□□1/的狗只靠打针就有很好的效果，1/3的狗有改善（仍然需要药物，但通常需要的类固醇有减少），而对 1/3的狗不起作用。

□□□□□□□□打针需要一整年的时间已达到最佳效果

- □□□□□□ If shots work, they are given for life.□□

□ □□□□□□□□□□□□□□□□□如果打针有效，需要终身使用。

Our collective goal is to achieve a level of tolerable pruritus, while using little to know steroids.□ In the allergic pets that we see, we sometimes find the pet needs steroids long term.□ In this case, we strive to use the lowest dosage possible—meaning the least we need on an alternate day basis to keep them comfortable.□我们的总体目标是把将搔痒症控制在可忍受的程度，同时尽量少的使用类固醇。在我看过的过敏的宠物中，我们通常需要长期使用类固醇。既然这样，我们就需要尽可能降低剂量 -至少我们需要在隔天的基础上以确保它们舒适。