



Chihuahua

Update

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Chihuahuas At Higher Risk for Vaccine Adverse Reactions

Chihuahuas, like many other toy breeds, are among those at higher risk of an adverse reaction to canine vaccines. Though factors such as weight, age and frequency of vaccines play a role in whether a dog suffers an adverse reaction, consistently smaller dogs are shown to be at greater risk.

The report is based on research conducted at Purdue University, where epidemiologists examined the vaccine records of 1.25 million dogs vaccinated at Banfield pet hospitals across the country from Jan. 1, 2002, to Dec. 31, 2003. The goal was to assess vaccine safety in dogs using the electronic database of a large general veterinary practice.

"Unlike in human medicine, veterinary medicine has no legal requirement for reporting and evaluating the risk factors for vaccine-associated adverse events (VAAE)," says George Moore, D.V.M., Ph.D., DACVIM, associate professor of clinical epidemiology at Purdue University. "With human vaccines, doctors must report adverse

events to the Food and Drug Administration or the Centers for Disease Control and Prevention. Veterinarians are more likely to report VAAE to vaccine manufacturers than to regulators, so it is difficult for regulators to fully assess risk overall or for selected breeds or ages."

Concerns about vaccine safety and questions about the necessity for annual vaccinations sparked both the American Veterinary Medical Association (AVMA) and the American Animal Hospital Association (AAHA) to revamp their vaccination protocol in 2002 and 2003. Both the AVMA and AAHA encourage veterinarians to adopt customized vaccination programs that focus on what is best for an individual dog. Revaccination recommendations should be designed to create and maintain clinically relevant immunity while minimizing adverse event potential, the AVMA says.

Meanwhile, dog breeders and owners want to adequately protect their dogs from disease, but they also want to avoid vaccinating more than neces-

sary. Breeders should work with a veterinarian who has experience managing groups of animals. In developing an appropriate vaccination schedule for individual dogs, a veterinarian is likely to assess age, lifestyle, health status, and home and travel environment. Also, a dog's overall health, exposure to other animals, and climate are important considerations. The prevalence of disease, and therefore likelihood of exposure, varies not only from region to region across the country but even among areas within a region.

Factors Affecting Adverse Events

Forty-two breeds representing more than 5,000 vaccinations were included in the study. Besides the Chihuahua, other breeds notably at risk of an adverse reaction were Dachshund, Pug, Boston Terrier and Miniature Pinscher.

"Clearly, a dog's weight plays a significant role in the risk of a

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Purina secondnature Dog Litter Ideal for Toy Dogs

Traditional housetraining of new puppies can be challenging. Purina secondnature brand Dog Litter & Housetraining System not only simplifies housetraining by helping to contain elimination, it also helps to keep puppies clean and reduces odor.

Beyond puppy training, Purina secondnature offers an alternative elimination system for long-term usage with adult toy- and small-breed dogs up to 35 pounds. Toy breeds in particular have small-sized bladders and often cannot wait several hours to be taken out. Dogs also sometimes refuse to go outside to eliminate during inclement weather, forcing owners to clean up mishaps.

"We designed this product around the needs of breeders and dog owners," says Ron Lewis, Purina Assistant Brand Manager. "We recognized that most

people put up with newspapers for housetraining or accident control, but they had lots of complaints. Newspapers are too flat or non-absorbent plus dogs are inclined to shred and chew up papers. Newspaper ink also rubs off on puppies' coats and paw pads, leading to tracking."

Made With New Technology

The secondnature litter pellets are made with a material composed of recycled newspaper mixed with sawdust. The paper-based pellets absorb from two to four times their weight, or more than 100 percent of their



volume, without falling apart. As secondnature pellets become wet, they swell but retain their shape.

"Absorbency is important, particularly since dogs urinate two times as much and twice as often as cats," Lewis says. "Other materials we tried absorbed too little moisture or broke apart when they became wet."

Pellets at the bottom of the litter pan become saturated first, leaving the surface pellets dry and helping to control odor. Owners are encouraged to scoop pellets after each use to

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Vaccine Adverse Reactions

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vaccine-associated adverse event," Moore says. "We found that reactions decrease as weight increases. Dogs weighing 22 to 99 pounds had about half the reaction risk as dogs weighing 22 pounds or less."

The researchers looked for VAAE that occurred within three days of vaccination and those that were diagnosed as nonspecific vaccine reaction, allergic reaction, hives, or anaphylaxis, a severe and rapid systemic allergic reaction. The vaccines studied included bordetella, borrelia, coronavirus, giardia, rabies, parvovirus and/or a multivalent vaccine with distemper, adenovirus, parainfluenza, parvovirus and leptospirosis.

Other findings include:

- Reactions were greatest in dogs 2 years of age, and rates increase significantly in dogs 1 year of age compared to dogs 2 to 9 months.
- VAAE increased significantly in neutered dogs as opposed to sexually intact dogs, even when factors such as age and weight were considered.
- The rate of reaction increases nearly 25 percent for each additional vaccine given at the same office visit.

The predominant clinical signs of a reaction were: facial or eye edema, or swelling; wheals, or acute swelling on the skin; generalized pruritis, or itching; and vomiting.

Clinical signs noted in a sample of 400 dogs with VAAE were:

- Facial or periorbital edema – 30.8 percent;
- Wheals/urticaria – 20.8 percent;
- Generalized pruritis – 15.3 percent;
- Vomiting – 10.3 percent; and
- Localized discomfort (swelling, soreness) – 8.0 percent.

The two-year study, examining 3.5 million doses of vaccine and 1.25 million dogs, found 4,678 adverse

events. Three dogs in the study died – all small breeds 6 years of age and older who received four or more vaccines at the same time.

Interestingly, many dogs that suffered vaccine reactions did not have repeat reactions with subsequent

CONCERNS ABOUT VACCINE SAFETY AND QUESTIONS ABOUT THE NECESSITY FOR ANNUAL VACCINATIONS SPARKED BOTH THE AMERICAN VETERINARY MEDICAL ASSOCIATION (AVMA) AND THE AMERICAN ANIMAL HOSPITAL ASSOCIATION (AAHA) TO REVAMP THEIR VACCINATION PROTOCOL IN 2002 AND 2003.

vaccinations. The risk for VAAE may have been higher for these subsequent vaccinations if there had not been a previous reaction; however, the actual rates of subsequent reactions are not yet known.

Follow-Up Testing Continues

"We are now doing follow-up studies and hope to learn more," says Moore. "To determine vaccine safety requires evaluation of a large population of dogs and follow up over a long period. We hope that future research will identify what vaccine component is causing the reactions as well as examine long-term adverse events. Prudent questions to ask about VAAE are how often they occur and the frequency of duration for different types of vaccines."

Safety trials prior to licensing a vaccine requires giving two doses of a vaccine to 500 to 1,500 animals with a follow-up in less than 30 days.

Thus, a safety report does not assess the effect of repeat vaccinations and the relatively short period of time before the follow-up limits the ability of the vaccine trials to recognize adverse events. A variety of breeds, and often only a few dogs of any one breed, are usually vaccinated.

As a result, "all of a sudden we get a false sense of security about what might be the safety record of that vaccine," Moore says. "In reality, there are many more animal vaccines today than 20 or 30 years ago. There also are many more accompanying implications."

Unfortunately, as the number of adverse reactions rise or as disease incidence decreases, people stop vaccinating and the risk of disease recurrence increases. "A recent outbreak of canine distemper in Chicago happened because people had stopped vaccinating their dogs against the disease," Moore says.

Ultimately, more research is needed to assess vaccine adverse reactions. Moore concedes that there were limitations of the Banfield study. For example, all vaccines came from one manufacturer; adverse effects were not recorded more than three days after vaccinations; and the study did not consider records of previous vaccinations.

Still the study was a success in providing insights about adverse reactions to canine vaccines and the need to learn more. The bottom line is providing adequate immune protection so as not to risk a disease outbreak and the unnecessary loss of canine lives. ■

Purina appreciates the support of the Chihuahua Club of America and particularly to Donna M. Shearer, chairwoman of CCA's Health MATTERS!, in helping to identify topics for the *Purina Pro Club Chihuahua Update* newsletter.

Purina secondnature

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promote cleanliness. Odor is controlled with a fresh green earth fragrance that is coated on pellets and activated by heat and moisture during elimination.

The *secondnature* litter pan is designed to accommodate both genders of toy- and small-breed dogs. It was developed for three weight groups: toy size for puppies and adult dogs up to 6 pounds; miniature size for puppies and adult dogs 6 to 15 pounds; and standard size for puppies and adult dogs up to 35 pounds.

"We tested countless litter pan configurations," Lewis says. "We wanted a strong, durable pan, but also one with high-enough walls so if a male dog lifted his leg, he would urinate without wetting the floor."

Successful Litter Training

Success with *secondnature* depends on successful training. For puppies, it is imperative to have a consistent schedule for food, water and exercise so their digestive system will be more predictable. Positive reinforcement from breeders and owners is crucial. In fact, studies show most dogs can be litter-trained over an extended weekend or within several days if there is interaction between the dog and handler.

Patterns in canine elimination behavior make placement of the litter pan important. It should be positioned away from a dog's food, water and sleep area. Housetraining of puppies works best when puppies are kept in a confined area to help limit the choices of where to eliminate and lessen the risk of accidents. During the initial housetraining period of about two

weeks, owners should use *secondnature* exclusively. If outdoor elimination is introduced too soon, puppies could become confused about where to eliminate.

The primary advantage that breeders cite for using *secondnature* is ease of housetraining. They also rate it as an effective backup elimination system for adult dogs, presenting options for owners who are not home all day or during inclement weather. Additionally, *secondnature* is convenient when traveling because it is lightweight, easy to pack and can be used anywhere.

Purina secondnature brand Dog Litter & Housetraining System can be purchased at pet specialty stores. For information, visit the *secondnature* Web site at www.doglitter.com or call (800) 778-3206 between 7 a.m. and 7 p.m. CST Monday through Friday. ■