

PRESS RELEASE

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Herbicide Exposure May Increase Cancer Risk In Dogs

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A study, published in the April 15 issue of the **Journal of the American Veterinary Medical Association**, examines the potential for increased incidence of bladder cancer in dogs exposed to lawns or gardens treated with herbicides and insecticides. The case-control study that examined genetically predisposed dogs suggests a greater emphasis should be placed on studying the long-term risk of exposure to herbicides in individuals genetically predisposed to develop cancers.

Lawrence T. Glickman, VMD, DrPH; of the School of Veterinary Medicine, Purdue University, West Lafayette, IN; and colleagues conducted a study to determine whether exposure to lawn or garden chemicals was associated with an increased risk of the most common cancer of the urinary bladder in dogs, transitional cell carcinoma (TCC). The prevalence of TCC in dogs examined at veterinary teaching hospitals in North America increased by more than 600% between 1975 and 1995. Scottish Terriers, Shetland Sheepdogs, Wirehaired Fox Terriers, and West Highland White Terriers, each had a significantly increased risk of TCC, compared with mixed-breed dogs. This suggests a genetic predisposition to TCC in terriers and primarily in Scottish Terriers.

Owners of Scottish Terriers (n=83) with TCC and Scottish Terriers (control n=83) with other health-related conditions completed a written questionnaire pertaining to exposure to lawn or garden chemicals during the year prior to diagnosis of TCC for case dogs and a comparable period for control dogs. The risk of TCC was significantly increased among dogs exposed to lawns or gardens treated with both herbicides and insecticides or with herbicides alone. Dogs exposed to lawns or gardens treated with insecticides alone had a small, but not significantly, increased risk of TCC compared with dogs exposed to untreated lawns.

In general, the researchers found that the risk of TCC was higher among dogs exposed to phenoxy acid herbicides, the most commonly used chemical in agriculture, or nonphenoxy acid herbicides, compared with dogs exposed to lawns or gardens that did not receive an herbicide application.

Phenoxy herbicides are also thought to be human carcinogens. While the predominant opinion of an expert panel of scientists convened by the Harvard School of Public Health in 1989 was that exposure to phenoxy herbicides could possibly cause cancer in humans, lifetime cancer

bioassays of rats, mice, and dogs have not found evidence of carcinogenicity.

As a result of their findings, the authors recommend:

- Although a cause-and-effect relationship has not been proven, owners of Scottish Terriers should decrease their dogs' exposure to lawns or gardens treated with common herbicides, particularly phenoxy herbicides and possibly nonphenoxy herbicides;
- Veterinarians should perform routine (every 6 months) cytologic urine exams in Scottish Terriers and other "genetically high risk" breeds over six years old;
- Studies should be conducted to identify the specific genes in Scottish Terriers that predispose them to TCC;
- Epidemiological studies with genetically susceptible dogs could provide a humane alternative to laboratory studies evaluating chemicals for human cancer risk.

The AVMA, founded in 1863, is one of the oldest and largest veterinary medical organizations in the world. More than 70,000 member veterinarians are engaged in a wide variety of professional activities. AVMA members are dedicated to advancing the science and art of veterinary medicine including its relationship to public health and agriculture. Visit the AVMA Web site at www.avma.org to learn more about veterinary medicine, animal care and access up-to-date information on the association's issues, policies and activities.

Media Advisory: To contact Dr. Glickman, call Sharon Granskog at 847-285-6619. This work was supported in part by matching grants from the Scottish Terrier Club of America and the American Kennel Club Canine Health Foundation.