

In May of 2010 we notified our subscribers and Newsletter editors that a bloat survey had been posted to our website. At that time we stated that the literature on Bloat pointed in many, directions none of which had brought breeders any closer to a solution. For these reasons we set out to examine some of the factors that might be contributing to its occurrence. The survey was limited to one access per computer. If breeders wanted to report on more dogs they were ask to use another computer.

The survey period has now ended and we grateful to more than 3,500 breeders and owners who completed the survey. The final report will take several months to complete. We will post the report on the website when it has been finalized. The title of the study is: Risk factors for surgical gastric dilatation-volvulus in dogs: an internet-based survey.

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The Abstract with preliminary findings has been Bloat Survey 2010

### What is Gastric Dilatation-Volvulus?

Gastric Dilatation-Volvulus (GDV) is a condition that occurs in dogs when the stomach becomes distended with air, and then while dilated, twists on itself. This interferes with the blood supply to the stomach and other digestive organs, and blocks the passage of food, leading to bloat. The distended stomach impedes the normal return of blood to the heart, causing drastically reduced cardiac output and a decrease in blood pressure. Blood and oxygen are deprived from tissues which in turn causes them to begin to die, releasing toxins into the blood stream which among

other adverse effects, cause serious disturbances in heart rhythms (cardiac arrhythmias) - a common cause of death.

Simple gastric dilatation does not produce volvulus (twisting). Current thinking has been that the dogs most susceptible to GDV are the large, deep-chested breeds, which have a cavity and space for the stomach to be more mobile within the abdomen. Other factors that have been accepted as risk for GDV include overeating, rapid eating, single daily feeding, high water consumption, stress, and exercise after eating

*The Abstract of the most recent study (2010) by Marko Pipan, Dorothy Cimino Brown, Carmelo L. Battaglia and Cynthia M. Otto follows.*

### Bloat phases and symptoms phase 1

1. Pacing, restlessness, panting and salivating.
2. Unproductive attempts to vomit (every 10-20 minutes).
3. Abdomen exhibits fullness and is beginning to enlarge.

**Action:** *Call Veterinarian to advise of bloat while in route. Transport dog to Veterinarian immediately!*

### Bloat phases and symptoms phase 2

1. Restless, whining, panting continuously, heavy salivating.
2. Unproductive attempts to vomit (every 2-3 minutes).
3. Dark red gums.
4. High heart rate (180 to 210 BPM).
5. Abdomen is enlarged and tight, emits hollow sound when thumped.

**Action:** *Transport dog to Veterinarian immediately.*

### Bloat phases and symptoms phase 3

1. Gums are white or blue
2. Dog unable to stand or have a spread-legged, shaky stance.
3. Abdomen is very enlarged.

4. Extremely high heart rate (200 BPM or greater) and weak pulse.

**Action:** *Get to a Veterinarian. Death is often imminent!*

Dogs may go from phase 1 - 3 bloat in a very short time. Some have known to do it in minutes!

Data taken from a more recent study (2010) will be reported in the months ahead.

The study has been titled: "Risk factors for surgical gastric dilatation-volvulus in dogs: an internet-based survey"

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Until the final report is published only a limited amount of summary information is available. The following is the abstract of the manuscript submitted to the Journal of the American Veterinary Medical Association for consideration.

## Abstract

*Objective:* To evaluate risk factors for gastric dilatation-volvulus (GDV) in a large number of privately-owned dogs across a wide geographic area. Design – Internet-based case-control survey. Animals – 2551 privately-owned dogs.

*Procedures:* Respondents were recruited by posting the electronic link to the survey on websites for dog owners; the information was also disseminated at meetings of dog owners, newsletters and email lists for dog owners and breeders, owner-oriented dog publications, and through emails forwarded by participants. The questionnaire addressed dog specific, management, environmental and personality associated risk factors for GDV in dogs.

*Results:* Factors significantly associated with an increased risk of GDV were being fed dry kibble. Other related factors were found to be: anxiety, being born in the 1990s, being a family pet, and spending at least 5 hours a day with the owner. Factors associated with a decreased risk of GDV were playing with other dogs and running the fence after meals, fish and egg dietary supplements, and spending equal time indoors and outdoors. A significant interaction between sex and neuter status was observed with intact females having the highest risk for GDV.

**Conclusions and Clinical Relevance:** In dogs with a high risk of GDV, regular moderate daily and postprandial activity appears to be beneficial. Feeding only commercial dry dog food may not be the best choice for dogs at risk; however supplements with fish or eggs may reduce this risk. The effect of neuter status on GDV risk requires further characterization.