

GDCNC NEWSLETTER

OCT-DEC 2023



PRESIDENT'S MESSAGE

HELLO EVERYONE

I hope everyone had a beautiful Christmas and a Happy New Year!

As a breed club with a very large demographic, it's hard to please everyone. Since so many have different avenues of interest, the board is open to suggestions if any of you have thoughts or ideas for your club and its growth. We are looking forward to 2024!

Currently, I want to thank the board for putting in tireless time, and energy to keep our club up and running!

Looking forward to 2024!

*Terri Dillistin – GDCNC
President*

4TH QUARTER BRAGS

We have some great brags for 4th Quarter.

Congratulations to:

Jessica Powers – Legado N Izya's Oops! I Did It Again

10/14/23 – Memphis KC-Lebanon TN – BW

10/15/23 – Tri-Star KC of Williamson Co-Lebanon TN – RWD

11/02/23 – GDCA National Specialty – Sante Fe NM – BBE Puppy Dog
1st in class

11/11/23 – Furniture City KC – Winston-Salem NC – WD/BOS

**Jim & Carole Cataudella – CH Valhalla's You Just Want Attention AOM
"Tessa"**

10/28/23 – Brandon FL KC – Plant City FL - SB

10/29/23 – Brandon FL KC – Plant City FL - SB

11/11/23 – Furniture City KC – Winston-Salem NC - BOB

11/12/23 – Furniture City KC – Winston-Salem NC – BOB/GP3

12/07/23 – S Jersey KC – Oaks PA – SB

12/08/23 – S Jersey KC – Oaks PA – SB

Cindy Casper – Smokin' Hot Safire I'm Bulletproof Because Of You "Coralee"

12/16/23 – Lehigh Valley KC-Allentown PA – WB/BW/BOBOH

*"Animals are like little angels sent to earth to teach us how to love. They don't get angry or play silly games. They are always there for us."
- Whitney Mandel*

NEUTERING CONCERNS

The picture can't be displayed.

During the course of most of my lifetime, one of the accepted tenets of good animal husbandry has been to spay and neuter our dogs. This has been repeated so often, and especially by veterinarians, that it's become an accepted protocol, almost a "given", like providing food, water, clean housing, and love. But, like so many things I've learned over the last 15 years or more, "it ain't necessarily so."

This article refers to dogs only. Due to different reproductive designs in our various pet animals, one cannot generalize between species.

This article isn't meant to suggest that you should never neuter a pet. There are sometimes compelling reasons to do so, however, rather than considering it a "knee-jerk" reaction, the pros and cons should be assessed for each individual. Read below to update your thinking on this critical topic.

I originally wrote this article in 2009. Most of the links I provided at that time are no longer viable. So, instead of links in the body of the text, I have provided new links which I found today in 2024.

Neutering Concerns

More and more studies have come out recently which show that Mother Nature has not made mistakes in giving our pet animals reproductive organs. And these studies are providing evidence that removing those organs is not without consequences.

Neutering (the general word for ovario-hysterectomy or spay, in females, or castration, in males) serves one main purpose, . That is the elimination of the possibility of unwanted pregnancies. But neutering is a very extreme way to achieve this goal, much like the proverbial killing a mosquito with a cannon. Like so much I'm learning these days, *education*, and its corollary, taking responsibility, are the keys, not wanton removal of organs which have complex and inter-dependent functions.

The first whispers that neutering isn't a benign procedure came to me from lectures and articles by performance-oriented veterinarians such as Chris Zink, DVM, PhD. She noticed that dogs who were neutered before maturity had greater incidences of cruciate injuries (knee) and hip dysplasia.

In this article, *Early Spay-Neuter Considerations for the Canine Athlete, One Veterinarian's Opinion*, Dr. Zink highlights studies that show that there are other, even more damaging effects from neutering any earlier than after the growth plates have closed. Some of today's veterinarians are spaying and castrating dogs as early as 7 weeks of age. In my opinion, this borders on criminal behavior. Dr. Zink goes into detail in her article about the deformities which result from this procedure such as thin bones, which grow out of proportion to proper conformation for health. We have been told that waiting until after a female has her first heat to spay is an "old wive's tale". But, I would argue that those tales which persisted for decades, came about because there is truth to them.

Other health conditions which studies relate to early neutering are obesity, behavioral issues, cardiac tumors, bone cancer, prostate cancer, urinary incontinence, hypothyroidism, and vaccine reactions which are more common in animals without the protective sex hormones. This procedure is also linked to shortened lifespan.

The most comprehensive and best written article on this topic is this one: *Long-Term Health Risks and Benefits Associated with Spay / Neuter in Dogs*, Laura J. Sanborn, M.S. May 14, 2007.

<https://naiaonline.org/pdfs/LongTermHealthEffectsOfSpayNeuterInDogs.pdf>

It is a fair and balanced article which concludes:

"... it appears that no compelling case can be made for neutering most male dogs to prevent future health problems, especially immature male dogs. The number of health problems associated with neutering may exceed the associated health benefits in most cases.

For female dogs, the situation is more complex."

If you already have a spayed or neutered dog and are having no problems, that is a good thing. If you *are* having problems, remember to use "neutering" as one of the symptoms when talking to your homeopath or wholistic practitioner. If you have a young animal and are facing this decision, please consider all the ramifications before taking this step prematurely.

To your pet's good health.

Betty

Links:

<https://www.gooddog.com/good-breeder-center/episode-74-rethinking-spayneuter-with-dr-chris-zink>

Gonadectomy – Rethinking Long-Held Beliefs
Chris Zink DVM PhD, DACVP, DACVSMR, CCRT, CVSMT, CVA
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Those of us with responsibility for the health of dogs need to continually read and evaluate new studies to ensure that we are taking the most appropriate care of our canine companions. This article reviews scientific evidence that, taken together, suggests that veterinarians and dog owners should revisit the current common recommendation that all dogs not intended for breeding have their gonads removed at or before 6 months of age. The results of a number of studies on the effects of removal of the ovary or testicles (gonadectomy) on orthopedics, cancer, behavior, and other health issues are briefly summarized, and alternatives to gonadectomy for preventing procreation are presented.

Orthopedic Considerations

- Bitches spayed at 7 weeks had significantly delayed closure of growth plates as compared to those spayed at 7 months; those spayed at 7 months had significantly delayed closure of growth plates as compared to those left intact.(1)
- In a study of 1444 Golden Retrievers, bitches and dogs spayed or neutered at less than a year of age were significantly taller than those spayed or neutered after a year of age.(2)
- In a study of 203 agility dogs, the author demonstrated that the tibia and the radius & ulna were significantly longer than the femur and humerus, respectively, in dogs that were spayed or neutered at or prior to 8 months of age as compared to intact dogs.(C. Zink, unpublished data)
- Spayed and neutered dogs have a significantly higher prevalence of CCL rupture (3–7), even when controlling for body size.(3)
- In a study of 759 male and female Golden Retrievers neutered or spayed before 6 months of age, the incidences of CCL rupture were 5 and 8 percent for males and females, respectively, compared to no CCL rupture diagnosed in intact dogs.(8)
- Dogs that were neutered at least 6 months prior to a diagnosis of hip dysplasia were 1.5 times more likely to develop hip dysplasia than sexually intact dogs.(9)
- Spayed/neutered dogs had 3.1 times higher incidence of patellar luxation.(10)
- Neutering Labrador Retrievers and Golden Retrievers before 6 months of age increased the incidence of one or more joint disorders by 2x and 4 to 5x, respectively.(11)

- In a study of 1170 German Shepherd Dogs, followed through 8 years of age, 21% of neutered males and 16% of spayed females were diagnosed with one or more joint disorders compared with 7% of intact males and 5% of intact females (12).

Discussion: Dogs that have been spayed or neutered at or before puberty can often be identified by their longer limbs, lighter bone structure, narrower chests and narrower skulls than intact dogs of the same breed. This differential growth frequently results in significant alterations in body proportions and particularly the lengths (and therefore weights) of certain bones relative to others. For example, if the femur has achieved its genetically determined normal length at 8 months, prior to a dog being spayed or neutered, but the tibia (which normally stops growing at 12 to 14 months of age) continues to elongate for several months because of the removal of the sex hormones (which contribute to growth plate closure), then the relationship between the femur and tibia will be different than what was genetically intended. This may result in an abnormal angle at the stifle and a longer (and therefore heavier) tibia placing increased stress on the cranial cruciate ligament (of the knee or stifle joint). It is well known that spayed and neutered dogs are more likely to be overweight or obese than sexually intact dogs (13, 14), and this can be an additional contributing factor to orthopedic diseases. Thus, keeping spayed/neutered dogs lean can help mitigate the increased risk of orthopedic conditions.

Cancer Considerations

- Spayed females had more than 5 times greater risk of developing cardiac hemangiosarcoma than intact bitches. Neutered males had 1.6 times higher risk than intact males had of developing cardiac hemangiosarcoma.(15)
- Spayed females had 2.2 times increased risk for developing splenic hemangiosarcoma than intact females.(16)
- Male and female Rottweilers that were neutered or spayed before a year of age had 3.8 and 3.1 times greater risk, respectively, of developing bone cancer than intact dogs.(17)
- Spayed/neutered dogs had a 2.2 times higher risk of developing bone cancer than intact dogs.(18)
- Neutered dogs had a 2.8 times higher risk for developing prostate cancer than intact dogs.(19)
- Neutered dogs had a 4.3 times higher risk of developing prostate carcinoma than intact dogs.(20, 21)
- Neutered dogs had a 3.6 higher risk for developing transitional cell carcinoma of the bladder than intact dogs, and a 3 times greater risk of developing any bladder tumor.(19)
- Spayed/neutered dogs had more than 4 times greater risk for developing transitional cell carcinoma of the bladder than intact dogs.(22)
- Early neutered male Golden Retrievers were 3x more likely to be diagnosed with lymphosarcoma than intact males, and late-spayed females were significantly more likely to develop hemangiosarcoma and mast cell tumor than intact females.(8)
- In a survey of 2505 Vizslas, dogs spayed or neutered dogs at any age were found to have a significantly higher risk of mast cell cancer, hemangiosarcoma, lymphoma and all cancers together than intact dogs.(23) In this study, the risk of gonadectomized dogs developing one of the above cancers was significantly higher than the risk of an intact female developing mammary cancer. Further, the younger the age at gonadectomy, the earlier the mean age at diagnosis of mast cell cancer, hemangiosarcoma, lymphoma, and all cancers combined.
- Female Labrador Retrievers spayed between 2 and 8 years of age had a significantly increased prevalence of mast cell cancer, hemangiosarcoma, and lymphoma.(11)

Discussion: The risk of dogs developing mammary cancer is classically listed as 0.5%, 8%, and 26% higher depending on whether ovariohysterectomy is performed before the first, second or any estrus thereafter, respectively.(24) However, a metastudy that examined peer-reviewed journal articles addressing the subject of whether there was evidence of an effect of neutering or age of neutering on the risk of mammary tumors concluded that the evidence that neutering reduces the risk of mammary cancer is weak and does not constitute a sound basis for firm recommendations.(25) At the time when many of the studies of gonadectomy and mammary tumor risk were conducted (late 1960s), incidence rates for all malignant neoplasms were 453.4/100,000 female dogs. Mammary tumors accounted for half of these tumors, or 198.8/100,000. Thus, the actual overall risk at that time of any bitch getting a mammary tumor was only 0.2%.(26) These figures for

increased risk of mammary cancer must be compared with the 200 to 400% increased risk of other cancers in spayed females. While about 30% of mammary cancers are malignant (27), as in humans, when caught and surgically removed early, the prognosis is very good.(28) This is in comparison to the other cancers listed, such as hemangiosarcoma, lymphosarcoma and bladder cancer, which are usually fatal. Given the balance of cancer risks listed above, owners of bitches should strongly consider having a hysterectomy (ovary-sparing spay) performed rather than an ovariohysterectomy, thus precluding the possibility of pyometra while retaining the benefits of the female hormones. In addition, the veterinary field should be developing programs for regular mammary examinations, including imaging, to facilitate early diagnosis of mammary cancer in all intact female dogs, as has been performed in women for decades.

Behavior Considerations

- Early age gonadectomy was associated with an increased incidence of noise phobias and undesirable sexual behaviors, such as mounting.(29)
- Vizslas gonadectomized at ≤ 6 months, between 7 and 12 months, or at > 12 months of age had significantly increased odds of developing fear of storms, compared with the odds for sexually intact dogs. Those gonadectomized at ≤ 6 months of age had significantly increased odds of developing a behavioral disorder, and the younger the age at gonadectomy, the earlier the mean age at diagnosis of a behavioral disorder or fear of storms.(23)
- Significantly more behavioral problems were seen in spayed and neutered bitches and dogs, with fearful behavior being most common in spayed bitches and aggression in neutered dogs.(30,31)
- In a prospective study, German Shepherd Dogs spayed between 5-10 months of age had significantly increased reactivity.(32)
- A recent study of more than 13,500 dogs showed no association between gonadectomy and aggression of dogs towards familiar people and other dogs. However, there was a significant increase in the odds of moderate or severe aggression toward strangers for dogs gonadectomized at 7 to 12 months of age.(33)

Discussion: A number of the early studies claiming to show positive behavioral effects of spay/neuter were significantly flawed. For example, one of the most often quoted publications to support improvements in behavior, particularly aggression, after gonadectomy does not actually provide any statistical analysis (34) and in another the difference was not statistically significant.(35) Another study performed a statistical analysis but showed that the age when the dog was neutered was not correlated with the degree of behavior improvement.(36) Most critically, none of the above studies included control groups of intact dogs. One of the more important undesirable behavioral effects of spay/neuter for canine athletes was a finding of a significantly lowered energy level. This was shown in a well-controlled study that examined over 3500 dogs.(31)

Other Health Considerations

- Female, and sometimes male, dogs that are spayed/neutered before puberty have an increased risk of urinary incontinence and it is more severe in bitches spayed earlier.(37-40)
- Spayed female dogs displayed a significantly higher risk of hypothyroidism when compared to intact females.(41) A health survey of several thousand Golden Retrievers showed that spayed or neutered dogs were more likely to develop hypothyroidism.(2) Neutered male and spayed female dogs had higher relative risks of developing hypothyroidism than intact females.(42)
- Neutered females had a 22 times increased risk of developing fatal acute pancreatitis as compared to intact females.(43)
- Risk of adverse reactions to vaccines is 27 to 38% greater in neutered dogs as compared to intact.(44)
- In a study of female Rottweilers there was a strong positive association between retention of the ovaries and longevity.(45)
- A study of 90,090 dogs revealed that neutered and spayed dogs had a significantly increased risk of atopic dermatitis, autoimmune hemolytic anemia, hypoadrenocorticism, hypothyroidism, immune-mediated thrombocytopenia, and inflammatory bowel disease than intact dogs.(46)

Summary

Clearly, the veterinary practice of recommending that every dog not meant for breeding have its gonads removed at or before the age of 6 months is not a black-and-white issue. More studies need to be undertaken to evaluate the broader health effects of spaying and neutering, and in particular to investigate nongonadectomy alternatives to prevent procreation such as vasectomy and hysterectomy. It is clear that the gonads are not just important for reproduction, but the hormones that they produce play a critical role in growth, development and long-term health. One study showed that spayed bitches had 30x higher levels of luteinizing hormone than intact bitches (47), and given that this hormone has receptors on diverse tissues throughout the body, and that binding of LH to its receptors can induce inflammatory cascades and cell division (48), it is possible that the lack of a feedback loop for this hormone might contribute to some of the negative effects of gonadectomy, at least in females.

Preventing Procreation

Males

If we leave the gonads intact, how can we prevent the production of unwanted dogs? For males, it is relatively easy to perform a vasectomy. One possible disadvantage is that vasectomy does not prevent some unwanted behaviors associated with males such as marking, humping and roaming. On the other hand, females and neutered males frequently mark and hump as well. Training is an effective solution to these behaviors. Appropriate containment is a solution to roaming. One potential issue is finding a veterinarian who can perform the procedure. Veterinary schools do not currently teach students how to perform vasectomies. However, the methodology has been described (49) and any veterinary surgeon can learn the technique.

Females

In females, the issues are more complex, because having a bitch in heat is inconvenient and leaving the uterus intact substantially increases the risk of pyometra, which can be serious and potentially fatal. One solution is to perform a hysterectomy (removal of the uterus), leaving the ovaries intact. As yet, however, the effects of this technique on female dogs have not been carefully studied. There is some suggestion that hysterectomized dogs continue to ovulate and may show behavioral changes, vulvar swelling and in some cases a minor discharge. Further, dogs that have this surgery will have intact ovaries, so veterinarians would need to establish an effective monitoring system for early detection of mammary cancer in intact bitches, as is available for women. In addition, there is the possibility of the dog developing a stump pyometra if small amounts of uterine tissue are left behind during the hysterectomy. This potential issue can be prevented, however, by careful removal of the entire uterus. It is to be hoped that the effects of this technique will be appropriately studied in the future.

Retained Testicles

For males with retained testicles, there is a logical solution, based on fact. A large prospective study showed that the incidence of testicular cancer in cryptorchid dogs was 12.7/1000 dog-years at risk.(50) In other words, if 100 dogs with retained testicles live to be 10 years old, approximately 13 of them will develop cancer in the retained testicle. The average age at which tumors develop in an undescended testes is 8.7 years.(51) These tumors are commonly benign, though they can grow quite large. Based on this study, it is recommended that dogs with retained testicles undergo abdominal ultrasound examination every two years to determine whether a tumor is developing in the retained testicle(s). If a tumor is detected, which will happen in a minority of dogs, it can be removed at that time. In addition, dogs with just one descended testicle should undergo a vasectomy on that spermatic cord. This solution allows the dog to have the benefit of its sex hormones, but prevents passing this likely genetic condition on to offspring.

Individualized Medicine

Most children in the decades after World War II had their tonsils removed when they suffered sore throats. Today this procedure is performed much less commonly because numerous studies have shown that removal of this immune organ imposes both short term and long term risks on the patient and provided questionable benefits (52). Likewise, in consideration of the evidence presented here, it is apparent that removal of the gonads presents significant risks to dogs. This is particularly true given that the procedure is not required to prevent procreation, the predominant reason for which gonadectomy is considered. Therefore, before performing

gonadectomy, it is important that we assess each dog and its living situation individually, weighing the risks and benefits of removal of the gonads. It is also critical that we discuss the pros and cons of the procedures and their alternatives with our clients. There is no single solution that fits every dog.

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RESCUE

We are still closed for intake for a bit. We applied for and received a grant from GDCA, which is always very helpful and appreciated. Our annual holiday auction will end on 12/9. Got a lot of great donations of items for that and starting to collect things for next year's annual Christmas in July auction. No major vet bills this month, just a few visits with a couple of our Danes.

Thanks,

Brittany Dail – Great Dane Rescue Alliance Inc.

Our Board of Directors

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SHOW REPORT

Show Report March 2024

March 2024 will be our 20th Anniversary and we will once again be having our concurrent and designated Specialties with the Tarheel Circuit. I am hopeful that our judges slate will bring a nice entry. Special Thanks to Cindy Casper for volunteering to run our raffle and to Carol Ragan for volunteering for our hospitality table. Please contact Terri Dillistin or Colleen Assell-Carra if you would be able to help at the show.

As we get a little closer, I will be asking each of you to donate \$10.00 towards our trophy fund, we are not a large club and need everyone's support. Remember without the individual breed clubs putting on Specialties the Majors are harder to find, so let's support our club so we can provide great prizes and points to help draw a great entry.

I hope everyone had wonderful holidays!

Terri Dillistin
President
AKC Breeder of Merit
DTVS Great Danes
Home of Champion Harlequin and Mantle Great Danes

JUST FOR FUN

Urgent Notice: Potential Danger of Dog Hair

In a press release today, the National Institute of Health announced the discovery of a potentially dangerous substance in the hair of dogs. This substance, called "amobacter caninii" has been linked with the following symptoms in females: Reluctance to cook, clean or do housework, Apparent aversion to make-up, good clothes

and high heels. Reluctance to spend money on home or car repairs until 'Baby' has new collars, leashes, beds, treats, food, blankets or toys.

"Amobacter caninii" may lead to a loss of physical contact with other humans and is emerging as equally contagious in men and may cause loss of interest in golf and cars. "Amobacter caninii" is thought to be addictive, driving the need for additional sources which may lead to a "pack mentality". Beware! If you come in contact with a human male or female infected by this substance, be prepared to talk about dogs for hours.

UPCOMING EVENTS

Pendleton SC – January 6-7 – Clemson KC
Brooksville FL – January 11-15 – Hernando Co KC – Clearwater KC – Pasco FL KC – Tampa Bay KC – Manatee KC
W Friendship MD – January 13-14 – Annapolis KC
Brooksville FL – January 17-21 – Hernando Co KC – GDC of Mid FL – Pasco FL KC – Tampa Bay KC – Clearwater KC – Manatee KC
Ocala FL – January 25-28 – Lake Eustis KC – Greater Gainesville DFA
Ladson SC – January 27-28 – Charleston KC
Atlanta GA – February 1-4 – Griffin GA KC – Conyers KC of GA -
West Friendship MD – February 17-18 – Maryland KC
Tallahassee FL – February 21-25 – Okaloosa KC – Greater Panama City DFA – Ochlockonee River KC of FL
Winston-Salem NC – March 2-3 – Forsyth KC
Raleigh NC – March 7-10 – Cary KC - Alamance KC – Durham KC – Raleigh C – GDCCNC – Fayetteville KC
Franklin TN – March 8-11 – Tullahoma KC of TN – GDC of Middle TN – Nashville KC
Louisville KY – March 14-17 – Mid-KY KC – Louisville KC – Evansville KC
Doswell VA – March 21-24 – Langley KC – VA Beach KC
Doswell VA – March 28-31 – Chesapeake VA DFA – So MD KC
Lawrenceville GA – March 28-64 – Sawnee Mountain KC of GA – Lawrenceville KC

WINTER DOG GROOMING

FOOT, SKIN AND COAT CARE

Salted sidewalks, de-icing chemicals, and dry heat cause foot licking, toenail damage, itchy skin and other winter woes of dog grooming.

December 2023 update ~ Jan. 2009

[Vickie Haywood](#), Professional Groomer

Every winter I see problems with dry coat, itchy skin, foot pads exposed to salt and de-icing chemicals, chewing toenails (yes, dogs do that too) and excessive foot licking.



Winter is a very hard time of year for pets. As the days shorten, the lack of sunshine brings about changes in coat growth. Many breeds grow an extra layer of undercoat, the thick wooly "pelt" that insulates a sled dog or a working collie on the misty, rainy hills of Yorkshire.



Dogs love to run in the snow but be careful of ice and aware that house dogs feel the cold more than outside dogs that are acclimated to it. Inside pets sleep the day away in warm homes. Dry heat is a problem for the coat, and it also confuses the system. The genetically ordered seasonal coat becomes uncomfortable, thus a cycle of growth and constant shedding begins. As a pet groomer, here are some special winter tips:

Giving him a CLEAN COAT is the kindest thing you can do for your dog. A clean, well-brushed coat, professionally bathed, *dried completely down to the skin*, meaning the loose undercoat has been lifted and raked out, cuts down on the amount of hair in

the home, and reduces the allergen-causing dander that results from dry itchy skin.

Read that paragraph again and follow the logic. Many people think a dog doesn't need bathing in the winter but that is the most important time of year due to the dry, heated inside air. You might think about that for your own hair... Also, a CLEAN coat insulates because it layers properly, trapping air under the topcoat to hold body warmth.

For dogs who love to play in the winter snow, use a silicone-based spray-in conditioner to repel snow from the coat. You can purchase this at most pet supply stores. Check ear tips and toe pads regularly for frostbite.

Even if your dog wears booties or foot pads, do not leave him in the snow or ice for more than 30 minutes at a time. If ice has formed between the toes, place the feet in luke-warm water to facilitate melting and then dry thoroughly. TIP: use a towel or chamois first, then blot with a paper towel to absorb the last bit of moisture.

Keep hair on paws and between pads trimmed. Toenails should not touch the floor. Long nails make footing treacherous, can be broken off, and also can damage pads and the muscles that support the foot, leading to orthopedic problems.

Snow and ice-melting chemicals can burn tender feet and pads. Subsequent licking and ingestion can not only make your dog sick but can be a diagnostic nightmare! Rinse feet well after every time outside unless you can convince your pet to wear paw protectors.

A good coating of Udder Balm (lanolin) can help soothe dry chapped feet and noses. And don't forget: a little extra omega 3 fatty acid supplement will help keep coat and skin in perfect condition! Be careful of winter burn on white and light colored dogs and use a sunscreen approved for pets!!!

Especially in winter, a professional groomer is your pet's best friend!

"A word about winter. A dog's pads can freeze to anything metal and the pads are difficult to treat."

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"The rich man's guardian, and the poor man's friend, The only creature faithful to the end."

- George Crabbe



