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Dog Tips

Could This Be the Cause of Your Dog's Health and/or Behavior Problems?

Is your furry best friend, like so many other dogs these days, anxious or fearful? Has he also developed orthopedic or metabolic disorders? If so, a common procedure performed like clockwork on the majority of dogs in this country could be the trigger for your dog's suffering.

Reviewed by Dr. Becker

STORY AT-A-GLANCE

- Dr. Suzanne Valente, a retired dentist, provides a vital resource for dog owners who want to learn more about the effects of spaying and neutering
- Valente's website, Healthy and Happy Dog, is a tribute to her beloved canine companion, Billy, whose health and behavior was radically altered as a result of being neutered at a young age
- Healthy and Happy Dog provides a one-stop resource, including over 100 peer-reviewed studies on the effects of desexing dogs
- One of Valente's goals is to encourage U.S. veterinary schools to teach sterilization techniques that preserve the all-important sex hormones, while also rendering dogs unable to reproduce
- It's also important that veterinarians begin offering hormone rebalancing for spayed and neutered dogs

Editor's Note: This article is a reprint. It was originally published October 16, 2016.

Dr. Suzanne Valente is a retired dentist in the San Francisco Bay area. She has put together an awesome website called the **Healthy and Happy Dog** that bark & whiskers visitors will appreciate. Valente discussed how it all came about.

She explained that she had a dog, Billy, who was a very frightened, very sweet little guy. Billy had a lot of problems, including behavioral issues, orthopedic and metabolic disorders and diabetes.

> *"We just loved him and wanted so badly to take care of him, but we had so little guidance," she explains. "We were going from one crisis to the next. We did a lot of research and we discovered that Billy's neutering had caused most of his problems.*
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> *We recognized that other guardians of other pets out there really want to take good care of their dogs, too, and we thought maybe we should pass on the information we learned to them."*

Dr. Valente's research began about four years ago when Billy developed diabetes, and when he passed late last year, she decided launching the website would be a good way to honor him.

Sadly, many of us have learned the hard way that we can and should sterilize animals in a manner that doesn't destroy the endocrine system, which is what occurs in many dogs who have been spayed or neutered.

The veterinary profession as a whole won't be changing its spay/neuter recommendations anytime soon, so the push for safer sterilization of dogs is really a grassroots movement of people with experience helping people without it understand what happens when an animal is desexed.

Measuring Hormone Levels in Spayed or Neutered Dogs

One of the great things about Dr. Valente's Healthy and Happy Dog site is the depth and breadth of information she provides. It's very helpful for pet parents who don't understand that removing a dog's ovaries or testicles is very different from, for example, removing a woman's uterus during a hysterectomy.

Ovaries and testicles, or gonads, produce sex hormones (e.g., estrogen and testosterone) that are essential components of the endocrine system.

As she explains, in humans, typically a hysterectomy is performed later in life. In dogs, full spays or neuters are often done before the animal is 6 months old. When sex hormones are removed in a still-developing body, it can affect everything from the brain to the bones.

Once a spayed or neutered dog acquires, say, orthopedic problems such as **hip dysplasia** or a cranial cruciate ligament (CCL) injury, in some cases, surgery can successfully correct the problem. But if a desexed dog develops metabolic issues, traditional veterinary medicine has little to offer.

Dr. Valente's site gives pet owners guidelines for what to watch for in a spayed or neutered dog. If their veterinarian diagnoses hypothyroidism, as she points out, "it probably means that if they're males, there's not enough testosterone, and if they're females, there's not enough estrogen."

If we can bring the estrogen or testosterone level into the normal range, often the thyroid problem disappears. In a desexed dog, it's important to check all hormone levels if one is out of whack.

Another example Valente cites is a spayed female dog who becomes incontinent at a fairly young age. This is usually the result of an estrogen deficiency, and if so, normalizing the estrogen level may resolve the incontinence.

Hormone replacement therapy is something most veterinarians don't get involved in. However, functional medicine practitioners in the veterinary community are big believers in the benefits of physiologic replacement of natural sex hormones.

The key, as Dr. Valente points out, is to measure all the hormone levels before prescribing anything. Otherwise, you might be treating the symptom (e.g., an underactive thyroid) instead of the cause (e.g., low estrogen or testosterone levels).

One of the First Things to Look for in a Desexed Dog — Behavior Issues

One of the first things Dr. Valente tells dog guardians to keep an eye on in a spayed or neutered dog is behavior. Her dog Billy was very fearful from the first day they brought him home. She suspects he'd been dealing with an undiagnosed, untreated hormone imbalance from a young age.

Let's say you have a very anxious dog. You can certainly check all his hormone levels, but short of that, there are other things you can try.

For example, Dr. Valente knows of anxious dogs who, after they begin taking SAMe (S-adenosylmethionine, a natural supplement), have a major improvement in their behavior. SAMe seems to mimic certain brain hormones.

Of course, offering hormone replacement therapy doesn't return a spayed or neutered dog to its pre-desexed state, but it can often help alleviate certain problems. Another example: in spayed female dogs, sometimes the hormone DHEA can help increase estrogen levels in the body.

Dr. Valente explains that removing the sex hormones via spay/neuter in a young dog causes the adrenal glands to kick into high gear to try to compensate for the missing sex hormones. The adrenals can do the whole job in some dogs for a period of time; in other dogs, they can't. It depends on the individual dog.

Ideally, we want to start supplementing the dog at the point at which the adrenal glands are no longer able to fully compensate for the loss of the gonads.

Interestingly, in a significant number of desexed dogs, the adrenals actually overcompensate and produce quite a bit of estradiol. So, hormone imbalances can result from too little or too much hormone production, and when there's too much estradiol, we need to control it for the rest of the animal's life.

An abnormally high estradiol level is seen in both female and male dogs. For instance, Dr. Valente's dog Billy had six times the normal amount of estradiol for a male dog — and no testosterone!

Animals with extreme health challenges can be very educational subjects, and Billy's situation was extreme. No testosterone, six times the estradiol he needed and he became **diabetic** as well (insulin is yet another hormone). She had a revelation when she recognized that Billy's diabetes was yet another result of his overall hormonal imbalance.

> *"We found that nothing helped his diabetes," she explains. "We couldn't control it with insulin injections, dietary adjustments, exercise or anything else we tried. It only began to improve when we started removing the estradiol from his body and supplementing with testosterone.*
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> *We were able to get his diabetes into a manageable state, but it took us years because initially, we just didn't know how to proceed."*

Fewer Behavior Problems Can Lead to Fewer Dogs Relinquished to Shelters

Dr. Valente had to become Billy's healthcare advocate, and she was essentially on her own trying to navigate through all his health problems. No veterinary endocrine society exists to offer information on balancing hormones in dogs after a spay or neuter. Veterinary medicine isn't there yet.

At Healthy and Happy Dog, Dr. Valente has done a really nice job compiling all the current research in one place on the health effects of spaying and neutering. Now, what kind of feedback has she received from people concerned about pet overpopulation? Many people are very concerned that any talk against spay/neuter will increase the number of animals in the shelter system.

Dr. Valente tries to strike a balance. People are certainly very concerned about pet overpopulation, which is why she encourages pet owners to ask their veterinarians for tubal ligations or vasectomies, which render the dog unable to reproduce while preserving the gonads and sex hormones.

For the record, most U.S. veterinarians are trained only in full spays/neuters. Until pet owners start demanding sterilization procedures that don't remove the ovaries or testicles, the veterinary industry will continue to perform only spays and neuters.

Dr. Valente makes a great point that hormone dysfunction as a result of a spay or neuter affects behavior, and behavior problems are the No. 1 reason dogs are relinquished to shelters. It follows that if more dogs were sterilized but not desexed, fewer would develop behavior problems and wind up at shelters.

> *"Billy is a perfect example," says Valente. "He came out of a Sacramento, California shelter. That shelter has a reputation for euthanizing a lot of dogs, and those they don't euthanize are often sent to the University of California, Davis for testing, and then euthanasia, which makes me very uncomfortable.*
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> *At the shelter, Billy was slated for euthanasia because he was too fearful. I always thought dogs in shelters were there because they were aggressive. What I've learned over the years is a lot of dogs are fearful, and the fear brings out aggression.*
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> *Because of their problems, they are returned to a shelter or not able to be adopted and they are euthanized. I think if we did tubal ligations and vasectomies instead of spays/neuters, we wouldn't be contributing to pet overpopulation. I actually think we will be benefitting dogs behaviorally to the point where fewer of them would find themselves in shelters in the first place."*

Healthy and Happy Dog Cites Over 100 Peer-Reviewed Studies

Dr. Valente explains that in setting up her website, she tried to document her findings so thoroughly that if someone had issues with what she was presenting, they could peruse over 100 peer-reviewed studies to show that the Healthy and Happy Dog site "isn't just something somebody decided to put together because they felt bad about their dog."

The site presents information that is "reliable, credible, peer-reviewed and legitimate — and people can rely on it," says Valente. The "one-stop shopping" aspect of it is convenient. Instead of having to visit multiple different websites, all the research is available in one place.

There are many veterinarians who could easily modify a traditional spay to leave the ovaries and remove just the uterus. You end up with a hormonally intact female dog who can't reproduce. However, she still has those all-important hormones that provide immunoprotection, improvement in longevity and behavior and a much more natural physiologic state from an endocrinological perspective.

She finds it disturbing that vet schools are not teaching tubal ligation or vasectomy. “It’s so sensible,” she says, “that you have to wonder why it’s not happening.” She says that fortunately, there are reputable veterinary surgeons in the San Francisco Bay area who are coming around, and so there’s more chance of finding one who is willing to do it.

Hormone Rebalancing in Spayed/Neutered Dogs

Another hurdle Dr. Valente sees is that veterinarians aren’t comfortable with hormone replacement therapy. She had a very difficult time finding someone to work with to treat Billy’s diabetes. She was eventually referred to a specialist who agreed to prescribe anastrozole, a very strong estradiol inhibitor. It worked very well for Billy, bringing his blood glucose down from around 400 into the 300s.

Dr. Valente prefers not to use melatonin, which is sometimes prescribed to inhibit estradiol. Her website explains why it may not be the best choice to bring down a dog’s estrogen level.

The specialist who prescribed anastrozole for Billy refused to prescribe testosterone, but ultimately, her regular vet agreed to do it, “Because he knew Billy was dying with a 300 glucose count all day, every day.” Once they started supplementing testosterone, not only did Billy's glucose count improve dramatically, but his behavior also improved and his fearfulness diminished.

Like so many dog parents, Dr. Valente tried positive reinforcement behavior training and socialization, as well as desensitization to help Billy overcome his fears. She didn’t have much success when it came to big noises like fireworks and thunder and lightning … until he was started on testosterone.

> *“We had fireworks like crazy,” says Valente. “He could hear them. He would turn and look, trying to figure out where the noise was coming from, but he was actually relaxed.*
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> *This was a dog that used to go underneath the stairs, inside the closet, with blankets and a radio playing to try and distract him from whatever bit of fireworks he might be able to hear, and he would still be shaking. We would sedate him and he still shook.*
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> *We took extreme measures to try and help him deal with things like fireworks, and it just wasn’t working. Then we started the testosterone, and the change was dramatic.”*

Clearly, it’s a huge challenge to find veterinarians who perform tubal ligations and vasectomies, as well as vets willing to try to rebalance hormones in a spayed or neutered dog. Balancing hormones is key because sometimes a hormone like estradiol has to be removed from the body rather than supplemented.

Many of you listening or reading here today may be thinking, “I can’t believe adding testosterone could actually chill out an anxious or nervous dog.” It’s important to know we’re not talking about supplementing huge amounts of synthetic hormones. The goal is to add just enough to bring hormone levels in line with where they would be if the dog had never been desexed.

We know sex hormones play a profound role in brain health. When we take the ovaries and testes, thereby robbing the body of those hormones, it throws the entire endocrine system out of balance. Mental disorders and behavioral issues can and do occur as a result of hormone deficiencies.

Spaying/Neutering and Environmental Toxins Have a Similar Effect

The veterinary community is just beginning to recognize the relationship between sex hormones and behavioral issues in dogs. As Valente experienced with Billy, and as seen with many dogs, when the hormones are rebalanced, it can bring about a remarkable change in an animal's demeanor and personality.

Dr. Valente believes metabolic diseases in dogs, such as diabetes, Cushing's and hyperestrinism (excess estrogen), are also linked to spaying and neutering. Many of the disorders, both physiological and behavioral, we're seeing in dogs today are linked to desexing.

Endocrine disruptors, for example, dichlorodiphenyltrichloroethane (DDT), bisphenol A (BPA), dioxin and perfluorooctanoic acid (PFOA), are chemicals known to be dangerous to plant and animal life (including humans).

> *"What people don't realize," says Valente, "is these dangerous chemicals that we go to great lengths to avoid are actually working by the same mechanism spay-neuter does. In other words, both of them block or mimic sex hormones. That's how they operate. When you look at the human and wildlife studies for endocrine disruptors, you see this whole spectrum of things that we're talking about today, including diabetes, hyperestrinism, cancer [and] thyroid disease.*
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> *The equivalent of subjecting your dog to DDT or your children to BPA, those are the kinds of changes that are actually occurring in your dog's body when you spay or neuter them. That, I think, helps people to really fully understand how this problem, this change in the endocrine system, changes everything. It affects all parts of the body in ways that we don't yet even understand."*

Dr. Valente mentioned that she read a dental association journal article about endocrine disruptors. In studies of rats, they've discovered a lack of estrogen or testosterone can even cause the failure of tooth enamel to develop properly!

Solution — Sterilization That Preserves Dogs' Sex Hormones

All of these issues are why Dr. Valente believes humans need to respect the importance of the sex hormones by performing tubal ligations or ovary-sparing spays on female dogs, and vasectomies on males. "It's much easier to approach the problem that way than it is to continue to spay-neuter and try to clean up the problems as they occur," says Valente.

Pet owners do spays and neuters, and then veterinarians do damage control for the rest of the dog's life, always falling far short of returning the body to its natural state. It seems very wise to simply make better choices for dogs at the time of sterilization.

It's not like our dogs get to live in a toxin-free environment to begin with. Chemical disruptors are everywhere. They're in dog beds treated with flame-retardant chemicals. They're in drinking water that is both chlorinated and fluoridated. They're in grass treated with pesticides.

When we add the chemical insults that occur as the result of spay/neuter to the environmental toxins our dogs are exposed to, it's a double whammy. In fact, Dr. Valente believes dogs probably have substantially more hormone-related problems than humans. She has channeled her heartache over Billy into a beautiful gift, the Healthy and

Happy Dog website. The site offers other pet owners the information they need to advocate for their dogs and make better decisions for them.

It’s really inspiring to meet a pet parent like Dr. Valente who dives in head first and learns everything she can about an issue she feels passionate about.