

Excerpted from the May 27th 2016 issue of Veterinary Practice News

Study: Early Neutering Poses Health Risks for German Shepherds

The study from UC Davis researchers found that neutering or spaying triples the risk of one or more joint disorders in these dogs.

German shepherd dogs are often the preferred breed for police and military work, as well as popular service dogs and family pets. But as most handlers, breeders and veterinarians are aware, joint disorders are a big concern in these animals.

A new study called "Neutering of German Shepherd Dogs: associated joint disorders, cancers and urinary incontinence," published in the journal *Veterinary Medicine and Science* finds that neutering or spaying these dogs before 1 year of age triples the risk of one or more joint disorders — particularly for cranial cruciate ligament, or CCL, tears.

“Debilitating joint disorders of hip dysplasia, CCL and elbow dysplasia can shorten a dog’s useful working life and impact its role as a family member,” said lead investigator Benjamin Hart, a professor at UC Davis School of

Veterinary Medicine. “Simply delaying the spay/neuter until the dog is a year old can markedly reduce the chance of a joint disorder.”

Dog owners in the United States typically choose to spay or neuter their dogs prior to 6 months of age, in large part to prevent pet overpopulation or hoping to avoid unwanted behaviors. In Europe, however, neutering is generally avoided by owners and trainers and not promoted by animal health authorities, Hart said.

During the past decade, some studies have indicated that spaying or neutering can have several adverse health effects for certain dog breeds. For example, a 2014 study published in *PLoS ONE* and also led by Hart, examined the health records of over 1,000 Golden Retrievers and found a surprising fourfold increase in one or more joint disorders associated with spay or neuter before 1 year of age. In the same paper, joint disorders in Labrador retrievers were found to be increased by just twofold in dogs spayed or neutered in the first year.

For this current study, researchers examined veterinary hospital records over a 14.5-year period on 1,170 intact and neutered (including spayed)

German shepherd dogs for joint disorders and cancers previously associated with neutering. The diseases were followed through 8 years of age, with the exception of mammary cancer in females, which was followed through 11 years.

The dogs were classified as intact (not neutered), neutered before 6 months, neutered between 6 to 11 months, or neutered between 12 to 23 months and 2 to 8 years. Joint disorders and cancers are of particular interest because neutering removes male and female sex hormones that play key roles in important body processes such as closure of bone growth plates.

Seven percent of intact males were diagnosed with one or more joint disorders, compared to 21 percent of males neutered prior to a year of age.

In intact females, 5 percent were diagnosed with one or more joint disorders, while in females neutered prior to 1 year of age this measure was significantly increased to 16 percent.

Mammary cancer was diagnosed in 4 percent of intact females compared with less than 1 percent in females neutered before 1 year of age. (The occurrence of the other cancers followed through 8 years of age was not higher in the neutered than in the intact dogs.)

Urinary incontinence, not diagnosed in intact females, was diagnosed in 7 percent of females neutered before 1 year of age.

“In addition to dogs suffering pain from joint disorders, the condition may also disqualify the dog as a working partner in military and police work,” Hart said. “We hope these findings provide evidence-based guidelines for deciding the right age to neuter a puppy to reduce the risk of one or more joint disorders.”

Other researchers on this UC Davis study were Lynette Hart and Abigail Thigpen of the School of Veterinary Medicine, and Neil Willits, Department of Statistics.

The research was supported by the Canine Health Foundation and donors to the Center for Companion Animal Health.