

The researchers compared the two breeds according to the incidence of three cancers: lymphosarcoma, hemangiosarcoma and mast cell tumor. They also calculated the incidence for each breed of three joint disorders: hip dysplasia, cranial cruciate ligament tear and elbow dysplasia.

The researchers also noted in these cases whether the dogs had been neutered before the age of 6 months, between 6 and 11 months, between 12 and 24 months or between age 2 and 9 years of age.

### **Neutering and joint disorders**

In terms of joint disorders, the researchers found that non-neutered males and females of both breeds experienced a five-percent rate of one or more joint disorders. Neutering before the age of 6 months was associated with a doubling of that rate to 10 percent in Labrador retrievers.

In golden retrievers, however, the impact of neutering appeared to be much more severe. Neutering before the age of 6 months in goldens increased the incidence of joint disorders to what Hart called an “alarming” four-to-five times that of non-neutered dogs of the same breed.

Male goldens experienced the greatest increase in joint disorders in the form of hip dysplasia and cranial cruciate ligament tear, while the increase for Labrador males occurred in the form of cranial cruciate ligament tear and elbow dysplasia.

“The effects of neutering during the first year of a dog’s life, especially in larger breeds, undoubtedly reflects the vulnerability of their joints to the delayed closure of long-bone growth plates, when neutering removes the gonadal, or sex, hormones,” Hart said.

### **Neutering and cancers**

The data also revealed important differences between the breeds in relation to the