"We found in both breeds that neutering before the age of 6 months, which is common practice in the United States, significantly increased the occurrence of joint disorders – especially in the golden retrievers," said lead investigator Benjamin Hart, a distinguished professor emeritus in the School of Veterinary Medicine.

"The data, however, showed that the incidence rates of both joint disorders and cancers at various neuter ages were much more pronounced in golden retrievers than in the Labrador retrievers," he said.

He noted that the findings not only offer insights for researchers in both human and veterinary medicine, but are also important for breeders and dog owners contemplating when, and if, to neuter their dogs. Dog owners in the United States are overwhelmingly choosing to neuter their dogs, in large part to prevent pet overpopulation or avoid unwanted behaviors.

This new comparison of the two breeds was prompted by the research team's earlier study, reported in February 2013, which found a marked increase in the incidence of two joint disorders and three cancers in golden retrievers that had been neutered.

Health records of goldens and Labradors examined

The golden retriever and the Labrador retriever were selected for this study because both are popular breeds that have been widely accepted as family pets and service dogs. The two breeds also are similar in body size, conformation and behavioral characteristics.

The study was based on 13 years of health records from the UC Davis School of Veterinary Medicine for neutered and non-neutered male and female Labrador retrievers and golden retrievers between the ages of 1 and 8 years of age. These records included 1,015 golden retriever cases and 1,500 Labrador retriever cases.