

Recommended Age of Neutering-why early neutering is bad  
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The following article is a review of current literature and discussion about the perils of early neutering.

Beagles are a medium sized breed and age of maturity of the skeleton particularly bigger bones is at least 12 months. Testosterone and oestrogen are involved in some of the long bone formations in the body so removing this too early can affect correct growth leading to prolonged growth and poorer quality bone with abnormal mechanical behaviours of the joints (1). Early neutering –ie before skeletal growth has finished results in taller leggier hounds as the closure of the plates in the long bones is helped by release of puberty hormones. There is also increased risk of cranial cruciate rupture, intervertebral disc disease, hip dysplasia and patella luxation being cited in some breeds. The number of breeds listed as affected is likely to increase as we know more.(2-6)

Bitches may be sexually mature before the body has finished developing physically and mentally. Although they may be able to come into season they have not finished growing if under 12 months and will certainly not have finished maturing mentally. Beagles will generally come into season when they have reached at least 6 months of age but there is a big variation and some will be 18 months before they reach sexual maturity. Some families genetically are later than others and it is best to be patient and not just neuter to suit the human family. The season is only three weeks and a well crate trained beagle can cope with plenty of chews and walks on a lead where the number of other dogs is low. Many vets will try to influence owners to spey their bitch at 6 months and often before a season. There was a paper (7) published many years ago looking at mammary tumour development in bitches who had cycles. The table below lists the number of dogs included which can be seen to be very low-24 in total. The risk pre season is based on one bitch only and shows neutering between 1<sup>st</sup> and 2<sup>nd</sup> season is still over 90% protective. (note the bottom two lines of the table are the bitches from the third line portrayed in a different way).

Age at Neutering	Relative Risk of Mammary Neoplasia	Number of bitches
Before 1 <sup>st</sup> Season	0.5%	1
Between 1 <sup>st</sup> and 2 <sup>nd</sup> season	8%	3
2 or more seasons	26%	20
2 or more seasons but <30months old	6%	2
2 or more seasons but > 29 months old	40%	18

Their study is widely quoted and there is no doubt that repeated cycles do increase the risk as this is shown in countries where neutering is not routinely practiced such as Scandanavia. However allowing one season allows many other very important health issues to be reduced.

As vets in prepubertal bitches we commonly see cystitis, irritation around the vulva and yellow/greenish vaginal discharges, which resolve once the bitch has had a season. The prepubertal vulva is very small and often recessed allowing skin irritation in the fold.

Urinary incontinence is more common in neutered bitches. In fact one of the treatments for this is a low daily dose of oestrogen supplement. The incontinence is caused by sphincter mechanism incompetence (SMI) which basically means the tissue closing the neck of the bladder and which allows urination under control becomes weak and involuntary urination occurs. A study (8) of over 333,000 records using Vetcompass (an anonymised system which allows review of UK veterinary practice records) showed an 3 times increased risk of neutering and increased weight for SMI. Dogs over 10kg have an increased risk. This applies to general body weight as well as obesity. In other words keeping your dog slim is essential. There are not many beagles under 10kg mature correct body weight but keeping them fit is a great help. SMI in male dogs is not very common and weight control in males is needed for other reason.

Beagles are a breed bred to think for themselves whilst out hunting. Thus they may be harder to recall and often get distracted when off lead, making yourself more interesting than a hare is difficult! Neutering will not alter this! In male beagles one of the commonest things I hear is "he runs off" "I think he is looking for bitches". Actually it is highly likely that dog is also hunting and this is not driven by testosterone. A heedless teenage beagle is best trained first and then neutered.

Teenage beagles generally need consistent guidance on how they fit in the family pack. If they are neutered too young that behavior can become fixed as they need to come out of puberty to be mentally mature. There is a lot of work looking at behavioural issues with dogs in rescues and when they were neutered. So far it seems likely that more dogs ending up in rescue with behavioural issues were neutered early-ie under 12 months.

Neutering reduces metabolic rate and this means they need fewer calories or more exercise to balance it. Often neutering is carried out without the vet warning the owner of this. Thus we hear "she is overweight because she is speyed". Actually not true-being overweight is cause by eating more calories than are expended. Overweight dogs have higher risks from many health condition-diabetes mellitus, joint issues both due to increased mechanical strain and also inflammatory mediators released the higher fat levels, and obvious things such as heart disease due to increased work load.

Neutering male dogs directly reduces risks of increased prostate size due to testosterone (not the same as tumours) and in bitches removes the risk of pyometra a life threatening uterine condition and ovarian cancers. These effects are very positive.

To summarise neutering should be carried out at the correct time to maximize health in your dog and afterwards their life style may be changed a little eg calorie control. Neuter to reduce risks of many health conditions but do it at the right time to maximize the longevity of your beagle.

1. Salmeri KR, Bloomberg MS, Scruggs SL, Shille V. Gonadectomy in immature dogs: effects on skeletal, physical, and behavioral development. *J Am Vet Med Assoc* 1991;198(7):1193-1203.

2. Slauterbeck JR, Pankratz K, Xu KT, et al. Canine ovariohysterectomy and orchiectomy increases the prevalence of ACL injury. *Clin Orthop Relat Res* 2004;Dec(429):301-305.
3. Whitehair JG, Vasseur PB, Willits NH. Epidemiology of cranial cruciate ligament rupture in dogs. *J Am Vet Med Assoc* 1993;203(7):1016-1019.
4. Torres de la Riva G, Hart BL, Farver TB, et al. Neutering dogs: effects on joint disorders and cancers in golden retrievers. *PLoS One* 2013;8(2):e55937.
5. van Hagen MA, Ducro BJ, van den Broek J, Knol BW. Incidence, risk factors and heritability estimates of hind limb lameness caused by hip dysplasia in a birth cohort of boxers. *Am J Vet Res* 2005;66(2):307-312.
6. Vidoni B, Sommerfeld-Stur I, Eisenmenger E. Diagnostic and genetic aspects of patellar luxation in small and miniature breed dogs in Austria. *Eur J Comp Anim Pract* 2005;16(2):149-158.
7. Schneider R, Dorn CR and Taylor DON (1969) Factors influencing canine mammary cancer development and postsurgical survival. *Journal of the National Cancer Institute* 43, 1249-1261.
8. Pegram, C. , O'Neill, D. G., Church, D. B., Hall, J. , Owen, L. and Brodbelt, D. C. (2019), Spaying and urinary incontinence in bitches under UK primary veterinary care: a case-control study. *J Small Anim Pract*. doi:[10.1111/jsap.13014](https://doi.org/10.1111/jsap.13014)