

# Juvenile Kidney Disease

## Frequently Asked Questions

*If you have questions that are not covered below, please email any further questions to [Boxerhealth@yahoo.com](mailto:Boxerhealth@yahoo.com)*

### **Q1: How big a problem is Juvenile Kidney Disease (JKD)?**

A: As JKD or a very similar problem has been officially reported in the UK, USA, France, Sweden, Norway and now Italy that suggests it is a worldwide problem in the breed. Analysis of insurance claims in Sweden puts kidney disease as one of the highest in Boxers, pedigree analysis in the UK of carrier dogs show it to have been widespread in show stock, many of these have now been withdrawn from breeding by their owners. Obviously not all cases get reported.

### **Q2: What is JKD?**

A: It is a result of abnormal development of the kidneys which normally continue to develop after birth, gradually changing from a foetal to adult state. Unless sufficient tissue changes into an adult state, affected dogs begin to experience problems with their kidney function causing clinical signs of JKD. If there is an overall reduction of 75% or more of functional kidney tissue, then recovery is unlikely (or if not more than 25% changes from embryonic to adult tissue)

### **Q3: Is there just one form of kidney disease that affects Boxers?**

A: Almost definitely there is more than one cause of kidney failure in Boxers, bacteria, viruses, toxic agents etc, research is in hand to distinguish the almost definitely hereditary disease JKD from other types of kidney failure.

### **Q4: Are kidney problems common in other breeds? Is there anything we can learn from other breeds?**

A: Yes, other breeds get kidney problems but so far, the genetic basis for it in Boxers has not been shown to be either similar or comparable. Until further research we cannot say whether there are similarities with known conditions in other breeds.

### **Q5: What symptoms does a dog with JKD usually present?**

A: The main symptoms seen are increased thirst and frequency of urination, loss of appetite weight loss, stunted growth, lethargy and vomiting may also be seen. When the kidneys are examined by ultrasound, they are smaller than normal and often uneven in shape.

### **Q6: What age do the symptoms usually become apparent?**

A: Symptoms usually start between four months and two years.

### **Q7: How should an affected Boxer be treated?**

A: There is no cure, but you should obviously consult your vet who will recommend a low protein diet with white meat (i.e., chicken, fish etc) as opposed to red meat or one of the diets formulated for kidney disease.

**Q8: How do I report a case?**

A: You need to send an email to [boxerhealth@yahoo.com](mailto:boxerhealth@yahoo.com) (or contact directly Walker Miller MRCVS or Sheila Cartwright, see below) and you will be sent all the details of what you can do to help by return. Any reasonable expenses will be met by the Boxer Breed Council.

**Q9: Will cases remain confidential?**

A: At present we do not have a DNA marker which can be used to detect carrier animals. The only tools we have available are the pedigrees of known carriers ([boxerJKD.com](http://boxerJKD.com)). By making sure you do not have known carrier animals on both sides of the pedigree you are far less likely to breed any cases of JKD. Using the dilution factor (50%, 25%, 12.5% etc.) as generations pass it becomes less of a risk, provided this is the case on both sides. It is up to you. Hopefully the owners will allow us to publish the pedigree on the [boxerJKD.com](http://boxerJKD.com) website, if breeders are not made aware of carrier animals, then avoiding action cannot be taken. It is up to you

**Q10: What else can I do to help?**

A: It is essential that everyone who breeds Boxers follows the good breeding practice of keeping in touch with every puppy that they have owned, at least annually, to check on their health. Do not assume that people will get in touch with you if there are problems since they often don't. If you are not already in touch with your puppy buyers in this way then you should start ringing round past litters you have bred, checking that they are fit and well. Any suspected cases of JKD should be reported immediately. If you do discover a case, then it is obviously particularly important to make certain that you have exercised every endeavour to follow up on all the siblings from that litter. Littermates of affected Boxers should certainly not be bred from. To help ensure that this does not happen we recommend that responsible breeders should be endorsing all the puppies they sell as 'progeny not eligible for registration'. Such endorsements should then only be subsequently lifted by the breeder once the dog has been satisfactorily heart tested and only when it is old enough to be considered unaffected by any juvenile kidney problems i.e.: over three years of age.

**Q11: How is JKD inherited.**

A: It would appear from pedigree analysis of known cases to be an autosomal recessive inheritance with carriers on both sides of the pedigree. An autosomal-recessive condition means that a dog must inherit two copies of an abnormal gene (one from its mother and one from its father) before its health is affected. With lack of success from several research groups around the world to find a DNA marker it is unlikely to be straight forward. Research is ongoing.

**Q12: I have a Boxer bitch that I want to mate. What should I do?**

A: Avoid close inbreeding, wait until your bitch is around 3 years of age to increase the chance that she is free of the disease but also check the specific gravity and protein levels in her urine. Ask the owner of the stud dog you are considering if he has produced JKD or is a sibling of a JKD producer.

A normal USG level in the dog is around 1.03. If your dog's test result is below this then please test it at least another twice. If you are still receiving low levels then it would be sensible to get your vet to check the Urea and Creatinine levels of your dog's blood for a more accurate level of kidney function.

Protein levels can be checked using a urine dipstick like Uristix.

**Q13: In planning mating's, what % of inbreeding on the Kennel Club's inbreeding coefficient calculator is acceptable?**

A: Choosing to become a breeder brings responsibilities. Every breeder needs to balance many factors when deciding on a mating such as health, temperament and type. The coefficient of inbreeding is just one of these considerations. At a time when the advice is to avoid close linebreeding, the Kennel Club's inbreeding coefficient calculator is simply a useful tool to help you avoid such matings but there is no 'target' figure that you should be working to. However, to give a range, you should remember that the breed average is 5.3% while matings such half-brother half-sister will result in a minimum value of 12.5% and will often be higher (20-25%) if there are several common ancestors in earlier generations.

**Q14: I have seen some Boxers' pedigrees advertised as JKD free. Is this possible?**

A: Until a test is available to detect carrier animals that is impossible.

**Q15: What is Breed Council doing to help?**

A: To have any chance to progress with JKD we need a test to detect carrier animals. To continue to carry out the research work in progress we need all probable cases to be reported both by breeders and owners of affected puppies. We are aggressively advertising the need for this in the dog press, veterinary journals, club websites, catalogues and schedules. Hopefully owners with affected dogs will consider donating the dog's kidneys for research when the sad day arrives plus a blood sample and a copy of the pedigree. Every Boxer breeder and owner needs to be clear – progress will never be made unless there is full breed co-operation in the identification and reporting of cases. **REMEMBER IT IS NOT YOUR FAULT IF YOU ACCIDENTALLY PRODUCE AN AFFECTED LITTER BUT IT IS YOUR FAULT IF YOU KNOWINGLY CONTINUE TO BREED FROM JKD PRODUCING BOXERS.**

## **Contact details**

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