Dach-Facts:
Information for Veterinary Surgeons

DACHSHUND HEALTH INFORMATION

There are some veterinary problems which occur more commonly in Dachshunds than in other breeds, and these are covered below. Some references to recent papers are included, as well as relevant on-line resources. This is not necessarily exhaustive and is only as up-to-date as the published data can make it - we would welcome any comments, or updates that you could provide, to help us make it even more useful.
[Please e-mail: chairman@dachshundbreedcouncil.org.uk]

It is important to understand that conditions affecting Dachshunds may also be found in other breeds or, indeed, in cross-bred dogs, where no programmes to limit or control them can be carried out.

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INTRODUCTION

There are 6 breeds of Dachshunds registered with the UK Kennel Club – Miniature (11lb./5Kg. or less) and Standard which should be up to 26 lb - but often may be rather larger. Both sizes can have Smooth, Long or Wire haired coats. (The Kennel Club, 2009) Miniature Dachshunds are amongst the longer-lived of dogs; one study found dogs of these breeds to be over 14 years old when they died (Mitchell, 1999). The median age of death in the Kennel Club's 2004 Health Survey was just under 12 years. (The Kennel Club, 2009)

Dachshunds are hounds and, as such, should be very intelligent dogs. The downside of this is that they can become bored when left with too little stimulation, and this can lead to behavioural problems. They normally appreciate their food and a loss of appetite can therefore be highly significant.

The Kennel Club. [Online] Breed Standards. Available from: http://www.thekennelclub.org.uk/item/18 [Accessed 24 November 2009]

Mitchell AR. (1999) Longevity of British breeds of dog and its relationships with sex, size, cardiovascular variables and disease. *Veterinary Record* **145**, 625-629

The Kennel Club [Online] Dachshund Health Survey http://www.thekennelclub.org.uk/cgi-bin/library.cgi?action=detail&id=1539

ORTHOPAEDIC CONDITIONS

Inter-vertebral Disc Disease (IVDD)

Dachshunds are achondroplastic dwarf breeds, with short legs and relatively long backs. The unique metabolic differences in the inter-vertebral discs in dogs with this condition cause degeneration of these in early to middle age and back problems can result. Dachshunds are the breeds that have the highest risk of this happening (followed by Pekingese). It is reported that about one in every four Dachshunds will have some degree of disc-related problems in their lifetimes. (Luttgen, 1993). Hansen Type 1 disease is more common in Dachshunds than Type 2. Unfortunately, Dachshunds are also predisposed to obesity (German and Morgan, 2008) and it is particularly important that they should keep fit and not become overweight as this will increase the risk of disc protrusion. Negotiating stairs, especially coming down, and jumping off furniture may also precipitate acute disc problems.

A DVD video presentation and PowerPoint Slides from the 2009 Breed Conference are available.

Spondylitis Deformans

This condition is usually a disease of ageing, so can affect any breed as they get older. It can occur as a secondary condition resulting from inter-vertebral disc degeneration so is potentially of importance in Dachshunds. Bony spurs form on the vertebrae; these are periarticular rather than arising from the end-plate.

The formation of the osteophytes in Spondylosis Deformans can be without clinical signs, but the spurs may create pressure on exiting spinal nerve roots, or occasionally on the spinal cord itself and the possibility of a resulting neurologic deficit must be considered. Dachshunds seem, though, to have a lower incidence of this condition than larger dogs, perhaps because the bony growths are smaller (Morgan and Biery, 1985).

German AJ and Morgan LE. (2008) How often do veterinarians assess the bodyweight and body condition of dogs? *Veterinary Record*, **163**, 503 - 505.

Luttgen PJ. (1993) [Online] *Canine Intervertebral Disk Disease*, prepared for The Dachshund Club of America. Available from: http://www.dachshund-dca.org/discbook.html [Accessed 16 November 2009]

Morgan JP and Biery DN (1985) [Online] in *Textbook of Small Animal Orthopaedics*, Publisher: International Veterinary Information Service, Ithaca, New York, USA. Available from: www.ivis.org/special_books/ortho/chapter_61/ivis.pdf [Accessed 24 November 2009]

NEUROLOGICAL CONDITIONS

Epilepsy

All dogs have a much higher incidence of epilepsy than humans and Dachshunds are no exception. Miniature Wire-haired Dachshunds in the United Kingdom have a specific condition. As many as 5% may be affected with Lafora's disease, an inherited late onset (usually over 5 years) progressive myoclonic epilepsy (Lohi and others, 2005). The supporting on-line material for this paper includes downloadable QuickTime movies of MWH Dachshunds having myoclonic seizures).

This causes generalised or complex partial seizures which may be induced by flickering lights or the television, also by sudden sounds and movement, but also may be spontaneous. Typically, dogs do not lose consciousness during their seizure but may remain standing during the episode and may even continue to try to walk. The seizure consists of a series a very brief jerks of the muscles.

It can progress slowly over years and other neurological deficits such as blindness and dementia may gradually appear. This is an inherited autosomal recessive disease caused by a mutation in the EPM2B gene which encodes a protein involved with carbohydrate metabolism. A toxic starch-like material (polyglucosan) accumulates within cells of the nervous system, but also in hepatic and muscle tissue.

The disease may be diagnosed from liver, muscle or nerve biopsy when Lafora bodies may be identified. Treatment with anti-epileptic drugs may help in some cases. A DNA test is now available, but blood samples have to be sent to Canada at present. The Wire-haired Dachshund Club is currently in the process of establishing a UK-based testing scheme and would appreciate information from vets (with the owner's permission) of dogs diagnosed with Lafora's.

Sensory Neuropathy

This seems to be a very rare condition, though reference is made to it in textbooks. A small number of Long-Haired Dachshund dogs presented with signs of unsteady hind gait and urinary incontinence and it was discovered that they had nerve degeneration, particularly of the the sensory nerves. The condition started at a very early age and by one to two years of age appeared to have become chronic. This was similar to sensory neuropathies found in humans and English Pointer dogs, nerve degenerations where the origin is, as yet, unknown (Duncan and others 1982).

The dogs in several of the cases were related, and this suggested a genetic basis to the disorder.

Duncan ID, Griffiths IR, and Munz M (1982) The Pathology of a Sensory Neuropathy Affecting Long Haired Dachshund Dogs. Acta Neuropathol (Berl) 58:141 - 151

Lohi H, Minassian BA and others. (2005) Expanded Repeat in Canine Epilepsy. *Science*, **307**, 5706, 81

Wire-haired Dachshund Club – www.whdc.co.uk

EYE CONDITIONS

Cone Rod Dystrophy

It has been known for many years that PRA (Progressive Retinal Atrophy) was occasionally found in Miniature Long-haired Dachshunds and the Kennel Club and BVA set up a scheme to examine the retinas of MLHDs and certify the absence of this condition (The Kennel Club, 2009).

In PRA the rod photoreceptors in the retina degenerate before the cone photoreceptors causing poor night vision, or night blindness, as the rods work best in low light. It has now been found, however, that in the MLHD the cones degenerate before the rods. This disease is therefore a cone-rod dystrophy and has now been termed 'cord1', for cone-rod degeneration.

In the last few years the genetic mutation which causes this disease has been found. The mutated gene is recessive, so dogs with one copy are not affected but carry PRA. Dogs with mutations in both copies of the gene (homozygous recessive dogs) should develop the condition.

A test for this gene was introduced in February 2005, and the eye scheme was revised using this to identify Dachshunds with the mutation. Interestingly, many more dogs were discovered with the gene than would have been expected from the results of the older clinical eye test scheme. Testing the eyes of homozygous recessive dogs using an electroretinogram machine (ERG - which measures the electrical impulses within the eye) has found that many have abnormalities even though the eyes appear clinically normal. In theory, these dogs should develop the disease and go blind, but there is some evidence that this might not happen until very late in life, and the dog could well have died of something else before this happens. The same mutated gene has now been found in Miniature Smooth-haired Dachshunds and they have been added to the KC/BVA eye scheme. (This mutation has also been found in the English Springer Spaniel.) (Mellersh 2008). A recent paper suggests that an additional abnormal gene may partially account for the late onset in most cases in MLHDs, but this is probably not the whole story and the work is continuing (Miyadera and others, 2009).

Owners of MLHDs and MSHDs who intend to breed from them should ensure they are tested for the cord1 mutation prior to breeding. At least one or other of the sire or dam should be tested “Clear” of the mutation. Swab test kits are available from the Animal Health Trust.

Recently, it has been discovered that a Cone Rod Dystrophy also exists in Standard Wire Haired Dachshunds in Scandinavia, but this is caused by a deletion in a different gene (Wiik and others, 2009). This condition is not currently considered to be of significance in the UK, but the Breed Council would appreciate receiving information from vets of any cases of WHDs going blind.

A DVD video presentation and PowerPoint Slides from the 2009 Breed Conference are available.

Sudden Acquired Retinal Degeneration Syndrome (SARDS)

SARDS is a disease process of unknown etiology that generally affects middle-aged to older dogs. Clinical signs include acute, bilateral visual deficits that lead to blindness over the course of days to weeks. ERG examinations of dogs which had suffered loss of vision with no apparent lesion affecting the eye were carried out in recent work reported from the USA. This found that mixed-breed dogs were most commonly diagnosed with SARDS but pedigree dogs frequently diagnosed included the Miniature Schnauzer and Dachshund (Montgomery and others, 2008).

Districhiasis

Extra eye lashes growing from the margin of the eye-lid may cause irritation of the cornea and excess lacrimation and is probably the most common hereditary eye abnormality (Barnett and others, 2002). It can occur in many breeds but is more of a problem in several, which include the Miniature Long-haired Dachshund. This condition may be present, but asymptomatic.

The cause may be an autosomal dominant gene with incomplete penetrance (Stockman, 1983).

K. C. Barnett, Sansom J, Heinrich C, (2002) in *Canine ophthalmology: an atlas and text*, Saunders, Elsevier Science Limited. Online, Available: http://books.google.co.uk/booksid=6BiTSnwJtJ0C&sitesec=reviews&source=gbs_navlinks_s [Accessed 25 November 2009]

The Kennel Club. [Online] The BVA/KC/ISDS Eye Scheme. Available from: http://www.thekennelclub.org.uk/item/310 [Accessed 24 November 2009]

Mellersh C. (2008) [Online] Dachshund PRA Update 04/12/09. Available from: http://sunsongdachshunds.wordpress.com/2009/12/04/cord1-pra-update-november-2009/ [Accessed 12 December 2009]

Miyadera K (2009) Phenotypic variation and genotype-phenotype discordance in canine cone-rod dystrophy with an *RPGRIP1* mutation. *Molecular Vision* 2009; 15:2287-2305 http://www.molvis.org/molvis/v15/a246/mv-v15-a246-miyadera.pdf

Montgomery KW, van der Woerdt A and Cottrill NB. (2008) Acute blindness in dogs: Sudden acquired retinal degeneration syndrome versus neurological disease (140 cases, 2000-2006). *Veterinary Ophthalmology*, **11,** (5), 314–320

Stockman M, (1983). Inheritable defects in dogs: 3, *In Practice*, **5,** 203-206

Wiik AC, Thoresen SI, Wade Lindblad-Toh CK and Lingaas F. (2009) A population study of a mutation allele associated with cone–rod dystrophy in the standard wire-haired dachshund. *Animal Genetics*, **40**, 572-574.

Animal Health Trust: cord1 PRA swab test requests: swab.request@aht.org.uk**.** Further information at: http://www.aht.org.uk/genetics_dachpra.html

CONDITIONS OF THE DIGESTIVE SYSTEM

Gastric torsion (dilation-volvulus or 'bloat')

Although gastric torsion is a medical and surgical emergency which is known to affect large and giant breeds of dogs, this condition has also been reported in smaller breeds such as the Dachshund (Ellison, 2001). This must not be forgotten in the differential diagnosis of the acute abdomen, as mortality may be as high as 30 percent and this will increase if treatment is delayed.

The reason for this seems to lie in the depth/width ratio of the chest. Dachshunds have deep chests, and fall into the same risk group as the large dog breeds.

The exact etiology of this condition is unknown at present. Ingestion of food and water followed by exercise is reported in some cases, but not the majority. It seems likely that a number of factors are involved, and further work will be needed to elucidate these. Breeding Dachshunds with a better width of chest might help reduce the risk.

Ellison GW, (2001) Gastric Dilatation Volvulus – An Update, [Online] *Dog Owners and Breeders Symposium July 28, 2001,* Canine Health Foundation, American Kennel Club. Available at: http://www.akcchf.org/pdfs/whitepapers/01breedersymp.pdf [Accessed 24 November 2009]

SKIN CONDITIONS

Pattern baldness

This non-congenital alopecia is similar to male pattern baldness in humans. In male Dachshunds both ear flaps are affected (Carlotti, 2005). The alopecia becomes complete by middle age. There is no treatment for this condition.

Carlotti DN (2005). Non hormonal allopecia. [Online] In: *Proceedings of the 30th World Congress of the World Small Animal Veterinary Association.* Available from: http://www.vin.com/proceedings/Proceedings.plx?CID=WSAVA2005&PID=10979&O=Generic [Accessed 26 November 2009]

CONDITIONS OF THE REPRODUCTIVE SYSTEM

Cryptorchidism

There is a higher than normal risk of cryptorchidism in small and miniature dogs, and these breeds include the miniature Dachshunds. This is important because there is a significant risk factor for the development of testicular cancer (Yates and others, 2003).

D. Yates, G. Hayes, M. Heffernan, and R. Beynon (2003) Incidence of cryptorchidism in dogs and cats. *Vet Rec.*, **152**: 502 - 504.

OTHER CONDITIONS

Blindness and Deafness in 'Double Dapples'

Dapple colouration is allowed by The Kennel Club Dachshund Breed Standard (The Kennel Club, 2009). The dapple colouration is a result of the expression of the same gene (*SILV* or silver locus gene) that causes the merle colour pattern found in Collies. The merle gene is dominant, so the pattern can usually be seen if the dog has it. An exception is in red dapples where the pattern is obvious at birth but usually fades, becoming invisible in the adult dog.

If dapple Dachshunds are mated together, the result will be a 'Double Dapple'. These dogs always have white markings, often similar to that seen in collies - a white band around the neck, with white on paws, nose, and tail tip. One or both eyes may be blue.

Unfortunately, there are lethal genes associated with Double Dapples. As well as death, these may cause varying degrees of vision loss, including missing eyes or "micro eyes". Between 25 and 50% of these dogs are likely to be deaf (Strain and others, 2009; Strain 2004). It is therefore irresponsible and unacceptable to mate two dapple Dachshunds. Sadly, this does happen sometimes and the dogs, often advertised as "Rare Coloured Dachshunds", "Double Dapple" or "Piebald", may have a degree of blindness and/or deafness (The Dachshund Breed Council). In November 2009 the Kennel Club announced that it would no longer register the offspring of two Dapple Dachshund parents. Heterozygous dapple Dachshunds may also have eye defects, although these are not as common or so serious as in the homozygous dog (Willis, 1989).

The Dachshund Breed Council [Online]. Available at: http://www.dachshundbreedcouncil.org.uk [Accessed November 2009]

The Kennel Club. [Online] Breed Standards. Available from: http://www.thekennelclub.org.uk/item/18 [Accessed 24 November 2009]

Strain GM, Clark LA, Wahl JM, Turner AE, and Murphy KE. (2004) Prevalence of Deafness in Dogs Heterozygous or Homozygous for the Merle Allele. *Vet Intern Med*, **23**:282–286.

Strain GM. (2004) Deafness prevalence and pigmentation and gender associations in dog breeds at risk. *The Veterinary Journal*, **167** 23–32

Willis MB, (1989) in Genetics of the dog, p228 HF & G Witherby Ltd, London

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FURTHER INFORMATION

Please contact the Dachshund Breed Council for further information on current Health Plans and research programmes, or to order copies of the Breed Conference DVD with videos of the Health Presentations. [E-mail: chairman@dachshundbreedcouncil.org.uk]

Health Reports for diagnosed conditions and causes of death of individual Dachshunds can be submitted, by owners, to the Breed Council's database at:
www.uk-dachshund-health-report-org.uk

The Breed Council's website is at: www.dachshundbreedcouncil.org.uk