



## Pituitary Dwarfism

### Definition

Pituitary dwarfism is a serious recessive inherited disorder commonly affecting German Shepherd Dogs, though cases have also been recorded in several other breeds including Rough Collies.

The pea-sized Pituitary gland, situated at the base of the brain, secretes six hormones which are essential for numerous bodily functions such as growth, reproduction, lactation, general metabolism and handling stress. The six hormones are:

Growth Hormone (GH) – essential for growth

Thyroid-stimulating hormone (TSH) – regulates thyroid function

Prolactin (PRL) – essential for lactation

Follicle-stimulating hormone (FSH) & Luteinising hormone (LH) – for ovulation in bitches and sperm production in male dogs

Adrenocorticotroph (ACTH) – stimulates the adrenal cortex

Any defect in the development of the Pituitary gland may result in specific hormone deficiencies. In dogs, congenital deficiency of GH or pituitary dwarfism is the most apparent example of pituitary hormone deficiency.

### Symptoms

Dogs carrying the mutated GH gene which cause pituitary dwarfism have no apparent symptoms and look exactly like normal dogs.

Although pituitary dwarfs are significantly smaller than their healthy littermates, they are in proportion. Dwarfs also tend to retain their puppy coats but this will gradually fall out leading to baldness. The appearance of permanent teeth may either be very late in developing or never develop at all.

Growth retardation and abnormal coat development are usually observed by the time an affected puppy reaches 2 to 3 months of age. As the puppy loses its coat, the skin becomes hyper-pigmented making the skin darker in colour and prone to bacterial skin problems.

Clinical signs of the disorder are not just limited to external appearance. Dwarfs also suffer from a whole range of other problems. For instance, deficiency in GH also leads to underdevelopment of the kidneys causing chronic renal failure; a deficiency in TSH results in an underactive thyroid gland causing the dog to be slow and dull; whilst insufficient gonadotrophins result in infertility as the males' testes fail to descend and the females fail to have seasons or ovulate.