Gross anatomy of the brain of red deer (*Cervus elaphus*) stags

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There is a lack of published information about the anatomy of the red deer (*Cervus elaphus*) brain. As an initial investigation into this a plastination technique was used to produce permanent specimens from which to study the major features of the brain of male red deer. In addition, the position of the brain in the skull in comparison with sheep was examined.

Four adult red deer stags were given two iv injections of 25,000 iu heparin thirty minutes apart then euthanised and decapitated. Within five minutes the head was perfused through the carotid arteries with six litres of 4% paraformaldehyde over a 20-minute period. Brains were removed then either left intact or cut into horizontal, sagittal or coronal sections of approximately 5mm thickness. Tissue was post-fixed in formalin, dehydrated with acetone and plastinated with Biodur S10 silicone rubber. Brain sections were photographed and the major structures and nuclear regions identified. At this level the anatomy appeared similar to that of the sheep.

Representative deer and sheep skulls were halved in the sagittal plane and cleaned of tissue to compare the relative position of the brain cavity. A major difference was noticed in the position and angle of the brain between the deer and sheep. The deer brain lay at a shallower horizontal angle with respect to the palatine plate and extended further forward under the frontal bone. The optic foramen was more pronounced and the sella turcica shallower.

In conclusion, the deer brain lies more horizontally and forward to that of the sheep, resulting in different shapes and angles of structures such as the optic chiasm and pituitary gland. Major structures within the brain appear similar to those of the sheep.