

## STRUCTURAL FEATURES OF THE CORNEA: LIGHT AND ELECTRON MICROSCOPY

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**Summary.** The aim of this study was to examine and compare the cornea structure of young and adult dogs, and pigs using light and electron microscopy. Young (10-15-day-old) and adult (over 8 month) dogs, and young (2-day-old) and adult (8-9 month) pigs were used in this study. We used 4 eyes of young dogs, 12 eyes of adult dogs, 12 eyes of piglets and 12 eyes of adult pigs. Corneal thickness was measured using ultrasonic pachymeter. Later cornea was taken for light (from young and adult pigs, and only from adult dogs) and transmission electron microscopy. Ultrasonic measurements of cornea thickness showed that young and adult pig cornea was significantly thicker than cornea of young and adult dogs. Cornea of adult individuals was thinner than that of young ones. Light microscopy showed the Descemet's membrane seen clearly in adult pigs and dogs' cornea but in piglets' cornea did the definite layer not mould.

Electron microscopy of the young and adult dogs revealed that corneal epithelium contained several layers of the cells. The basement membrane of the corneal epithelium cells was clearly seen in both young and adult dogs cornea. Superficial cells of the cornea epithelium were elongated. In young dogs superficial cells of epithelium had a lot of vacuoles. The stromal collagen formed different clearly seen layers in young and adult dogs' cornea. The corneal structure of the pigs' cornea is similar to that in dogs. Two types of cells, dark and light, were seen in the corneal epithelium of the piglets. Corneal stroma consisted of the collagen layers and fibroblasts. Descemet's membrane was seen as thick homogenous layer in the piglet cornea. The endothelial cells of piglets' cornea had more square form than adult pigs' cells.

**Keywords:** cornea structure, light and electron microscopy, dog, pig.