

## **Hazardous Effects Of Nonnatural Life On Visual Pathways: A Biophysical Experimental Study**

### **ABSTRACT**

#### **Background and aims:**

Visual pathways is the most biggest and important part of the brain because they receive the most rational informations from universe and integrate in brain. Natural life have magnificent generative effect on the funtions of animal machine. For this idea, visual pathways related neural regions of wild and male laboratory rabbits were examined.

#### **Methods:**

Ten wild rabbits collected from mountains and the ten rabbits obtained from animal laboratory. Weights, pupil diameters, pupil reaction to light, numerical values of axon-neuron densities of retina, optic nerves, ciliary ganglia, surface areas and volume values of visual cortexes and hippocampuses were estimated by stereological methods. The results were analysed by Mann Witney-U test.  $P < 0.005$  accepted as meaningful.

#### **Results:**

Wild rabbits documents in proportion to laboratory rabbits documents are summarised as follows consequitively: Pupil reactions were analysed by ocular tomography devices (Figure-1). Olds they were 3.5-3.5; body weight: 3.94-4.5; bilinking times: 5msn-9 msn; pupil diameters under light:  $6300\mu$ - $8200\mu$  (Figure-1); neuron numbers in retina:  $252.400/\text{mm}^2$ - $228.200/\text{mm}^2$ , optic nerve diameters: 1.4mm-1,1mm, optic nerve fiber density:  $257.800/\text{mm}^2$ - $231.000/\text{mm}^2$  (Figure-2), neuron density of ciliary ganglions:  $9.540/\text{mm}^3$ - $6.852/\text{mm}^3$ ; neuron density of visual cortex:  $44.000/\text{mm}^3$ - $39.000/\text{mm}^3$ ; surface area values of visual cortex:  $41\text{mm}^2$ - $37.4\text{mm}^2$  and their volumes were estimated as  $136\text{mm}^3$ - $122\text{mm}^3$  (Figure-3). Also some extent neurodegenerative changes were detected in optical pathways in laboratory animals (Figure-4).

#### **Conclusion:**

Wild animals have more developed and well functioned visual pathways from retina to occipital cortex. To have the most important information receiving and integrating neural network natural life is necessary.

**Key Words:** visual pathway, non-natural life, biophysical