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## [Potential of melatonin for prevention of age-related macular degeneration: experimental study].

[Article in Russian]

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### Abstract

Decline with age of the content of melatonin is considered as one of the leading mechanisms of aging and development of associated diseases, including age-related macular degeneration (AMD)--the disease, which becomes the most common cause of blindness and acuity of vision deterioration in elderly. The prospects of the use of melatonin in the prevention of AMD is being actively discussed, but as a rule on the basis of the results of the experiments on cells in retinal pigment epithelium (RPE). We showed previously that the senescence-accelerated OXYS rat is an adequate animal model of AMD, already used for identifying the relevant therapeutic targets. Here we have investigated the effect of Melatonin (Melaksen, 0,004 mg per kg--a dose equivalent to the recommended one for people) on the development of retinopathy similar to AMD in OXYS rats. Ophthalmoscopic examinations show that Melatonin supplementation decreased the incidence and severity of retinopathy and improved some (but not all) histological abnormalities associated with retinopathy. Thus, melatonin prevented the structural and functional changes in RPE cells, reduced the severity of microcirculatory disorders. Importantly, Melatonin prevented destruction of neurosensory cells, associative and gangliolar neurons in the retina. Taken together, our data suggest the therapeutic potential of Melatonin for treatment and prevention of AMD.

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