

4. HETEROCHROMIA: CAUSES, RISK FACTORS, TREATMENT



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Introduction. According to the National Center for Biotechnology Information, approximately 1% of the global population is diagnosed with heterochromia. Iris heterochromia is the uneven pigmentation of the iris, either unilateral, central, or sectoral. As a benign mutation, congenital heterochromia occurs in both humans and animals and is genetically determined by Horner's syndrome, Waardenburg syndrome, and Sturge-Weber syndrome. Acquired heterochromia is less commonly observed compared to congenital heterochromia and can result from various factors, including diseases, injuries, or medical treatment with prostaglandins (latanoprost).

Aim of study. Identification and study of causes, risk factors, and a recent innovative treatment method: iris iridoplasty.

Methods and materials. I have analyzed scientifically verified documents from websites such as: PubMed, NCBI, American Academy of Ophthalmology, using keywords like heterochromia, congenital, ophthalmology, visual acuity, iris heterochromia, photoablative cosmetic iridoplasty, and eye color change.

Results. According to literature data, nearly 50% of the U.S. population has brown eyes, and this color predominates in regions with a warm climate. People with blue eyes lack melanin in the stroma, causing light to scatter upon contact with the eyes. The most uncommon color is green, representing only 2% of the population. Heterochromia is more common in women than in men, based on a study conducted several decades ago in Austria. The treatment of heterochromia is still under study. In the past, treatments included the use of contact lenses, intraocular lenses, and autopigmentation. However, these invasive techniques led to frequent and severe complications such as glaucoma, uveitis, endothelial damage, and reduced visual acuity. Consequently, there is currently no efficient and safe long-term technique. Four types of equipment were tested, and ultimately, it was concluded that the best results are provided by the Nd: Yag Crystal Q-switched laser.

Conclusion. Congenital heterochromia should not scare anyone, as research from the American Academy of Ophthalmology, in most cases, congenital heterochromia does not affect visual acuity (VA). However, there are cases of acquired heterochromia where VA may be compromised. Additionally, I want to highlight the effectiveness, safety, reliability, and results of photoablative cosmetic iridoplasty (PCI) using the Nd: Yag Crystal Q-switched laser-the success rate of this treatment is 95%.