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Laser scleral microporation may restore visual performance in presbyopic eyes

Patients with presbyopia treated with laser scleral microporation experienced up to a three times increase in their binocular visual field, according to a poster at the virtual Women in Ophthalmology Summer Symposium.

“Laser scleral microporation is an ultra-minimally invasive procedure to restore visual function in presbyopic patients by using a near-infrared laser to uncross-link aged scleral tissue and decrease biomechanical stiffness in the eye,” poster co-author **AnnMarie Hipsley, DPT, PhD**, told Healio/OSN.

Hipsley and colleagues evaluated changes in visual outcomes of 32 presbyopic eyes of 16 patients who underwent laser scleral microporation (Ace Vision Group) performed with an Er:YAG laser. The laser creates a microporation in four quadrants of a 5 mm by 5 mm matrix in five anatomic zones, which uncross-links aged scleral microfibrils over the area of the ciliary muscles, Hipsley said.



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Patients gained a mean logMAR visual acuity of 0.21 at near and intermediate at 3 months. In the early results of five patients, the average area of binocular summation increased to 104.68 mm² from 70.45 mm² at baseline. Some patients experienced up to a three times increase in their binocular visual field at 1 month.

Preliminary results of the technology show it to be a safe and effective procedure for restoring all ranges of vision, according to the poster.

“Whereas extended depth of focus aims to impact a patient’s depth of focus through an IOL replacement of a cataract patient’s natural lens, [laser scleral microporation] therapy restores dynamic clear vision to the presbyopic patient by impacting all optical elements to restore visual functionality without replacing it,” Hipsley told Healio/OSN.

laser presbyopia visual acuity