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Earlens raises \$51M to launch laser-based hearing aid after FDA nod

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After a nod from FDA late last year, novel hearing aid player [Earlens](#) has raised \$51 million in debt and equity to back the launch of its light-driven hearing aid. The agency cleared it via its de novo premarket review pathway last September; that route is reserved for low- to moderate-risk medical that do not have a substantially equivalent marketed device.

Hearing aids are a tough category since the technology is infamously poor and hearing aids are typically an out-of-pocket expense for U.S. patients. Earlens is aiming to offer its novel, improved technology at a cost that's comparable to existing options. The device is indicated for adults with mild to severe sensorineural hearing impairment.



Courtesy of Earlens

"For the millions of Americans with hearing impairment, hearing aids can significantly improve regular daily communications, as well as overall quality of life," said Dr. William Maisel, noted deputy director for science and chief scientist in the FDA's Center for Devices and Radiological Health. "People with hearing impairment now have a new option that may help improve their hearing by amplifying sounds over a broad spectrum of frequencies."

The Menlo Park, CA,-based startup's investors include New Enterprise Associates, Aisling Capital and Lightstone Ventures, all of which hold a seat on its board. Its prior financing was a \$40 million Series B around April 2014.

The latest financing includes \$34 million in new venture capital investment, in addition to \$17 million in outstanding convertible bridge notes. Earlens issued a recent SEC filing on the financing, but detailed it more precisely to *FierceMedicalDevices*.

The Earlens Contact Hearing Device (CHD) includes both a tympanic membrane transducer, which is placed deeply into the ear canal on the eardrum without surgery, and a behind-the-ear audio processor that sits on the outer ear and is connected to an ear tip that is placed in the ear canal.

Sound waves are converted by the system to electronic signals, which are digitally processed, amplified and sent to the ear tip. A laser diode converts the signals into pulses of light, which shine onto a photodetector in the tympanic membrane transducer. This then converts the light back into electronic signals to transmit sound vibrations directly to the eardrum.

In a 48-subject trial over 30 days, Earlens offered a 33% average improvement in word recognition. Users also gained function in higher frequencies, which is typically not found with conventional air-conduction hearing aids.

- here is the SEC [filing](#)

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