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New study finds federally-funded technology saved Medicare \$9 billion

Rockville, Md. — A new study quantifying a 21-fold return on investment suggests an efficient — and non-partisan — method to cut healthcare spending is to invest in basic research. The paper tracks how a new technology aids doctors in reducing the number of unnecessary drug injections used to treat a blinding condition called wet age-related macular degeneration (AMD).

According to [the study](#), Medicare has enjoyed \$9 billion in savings over an eight year period from more efficient use of the effective, but expensive, anti-vascular endothelial growth factor (anti-VEGF) agents used to treat wet AMD. This compares favorably to the approximately \$400 million investment over 20 years by the National Institutes of Health (NIH) and National Science Foundation (NSF) to develop the technology known as optical coherence tomography (OCT), which allows eye care providers to see the back of a patient's eyes via a quick, non-invasive and inexpensive exam. The paper is published in the *American Journal of Ophthalmology*.

“While we are fortunate to have highly effective anti-VEGF drugs that require injections every one to two months, at \$2,000 per injection over a 2-plus year treatment period, they are expensive,” said Philip Rosenfeld, MD, PhD, professor of ophthalmology at Bascom Palmer Eye Institute and coauthor of the paper. “Any strategy that can save patients and Medicare money by reducing the number of injections, while preserving vision, would be embraced.”

“Everyone understands that research leads to important advancements in medicine and technology,” says corresponding author David Huang, MD, PhD, FARVO, professor of ophthalmology at the Casey Eye Institute. “But, our paper is a rare example of being able to quantify the impact research can have, in this case via reduced healthcare spending. We have shown that return on research investment can be very high.”

OCT, which started as an academic curiosity in a few labs in the early 1990s, can now be found in almost every eye clinic in the developed world. “The government is in a unique position to be able to sustain research and development cycles that span decades,” says Eric Swanson, coauthor and cofounder of the first OCT company.

“The invention of OCT empowered eye care providers to tailor anti-VEGF therapy to the needs of the individual patient by determining if treatment is needed right now, or if it can safely be delayed a few weeks,” says Rosenfeld.

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The **Association for Research in Vision and Ophthalmology (ARVO)** is the largest eye and vision research organization in the world. Members include nearly 12,000 eye and vision researchers from over 75 countries. ARVO advances research worldwide into understanding the visual system and preventing, treating and curing its disorders.