



# Jay Stewart: the advances of the treatment of ophthalmic diseases

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## Introduction

Dr. Jay Stewart (*Figure 1*) is Associate Professor of Ophthalmology at the University of California, San Francisco (UCSF) and Chief of Ophthalmology at Zuckerberg San Francisco General Hospital and Trauma Center. Dr. Stewart is a vitreoretinal specialist whose expertise includes complex vitreoretinal surgery and the care of conditions such as age-related macular degeneration, diabetic retinopathy, ocular trauma, retinal detachment, retinal vascular diseases and uveitis.

Dr. Stewart earned his medical degree at Harvard Medical School and completed residency in ophthalmology at UCSF and fellowship training in vitreoretinal diseases and surgery at the Doheny Eye Institute at the University of Southern California. In his research, Dr. Stewart studies diabetic retinopathy, age-related macular degeneration, drug delivery to the eye and the permeability and biomechanics of eye tissues. He has authored over 70 peer-reviewed publications in ophthalmology as well as numerous book chapters. He is a member of the American Academy of Ophthalmology, American Society of Retina Specialists and the Retina Society.

## Interview

*We know that ophthalmic diseases now bringing more and more physical and mental suffering to patients. So what do you think are the risk factors that causing these kinds of disease to human?*

Many of the most significant ophthalmic diseases appear to result from a combination of genetic and environmental factors. This interplay is not yet well understood, but in conditions from age-related macular degeneration to diabetic retinopathy, it appears that lifestyle can often play a role in modifying a given patient's risk profile. We try to focus on these aspects when discussing vision-threatening conditions with patients so that they can learn about steps



**Figure 1** Jay M. Stewart, MD. Associate Professor of Ophthalmology at the University of California, San Francisco (UCSF) and Chief of Ophthalmology at Zuckerberg San Francisco General Hospital and Trauma Center.

they can take to try to improve their chances of maintaining good vision for as long as possible. In general, patients very much appreciate the opportunity to try to exercise a measure of control over their future, as it relates to the preservation of vision.

*What do you think are the most impressive advance in the treatment of ophthalmic diseases?*

Both medical and surgical advances have been very beneficial for patients. Recent insights into the mechanisms and treatment of neovascularization in the eye have revolutionized the vitreoretinal field. Over the past decade, countless patients have been able to maintain useful vision who would previously have lost their sight. This has been very important in helping patients maintain their independence, whether the patient is an elderly person

with age-related macular degeneration or a working-age individual who is the family breadwinner. In the surgical treatment of vitreoretinal disease, great advances have taken place in the past 15 years or so, especially with the development of microincisional, transconjunctival vitrectomy techniques. In general, these have improved patient safety and comfort while reducing operative times.

***What are the differences when choosing the options for treatment of ophthalmic diseases among different countries? For example, between the developing country and developed country***

I've been fortunate to learn from physicians in multiple countries about some of these differences. According to governmental regulations, costs, or alternative approaches to care, the available medical therapies might vary from one country to another. We have observed this in the case of anti-VEGF therapies, in which some of the newer, FDA-approved agents in widespread use in the United States may be unavailable or not accessible to most patients in other countries. This can constrain patients and physicians by reducing their choices for appropriate therapy. Sometimes the outcomes will be suboptimal.

One of the other noteworthy differences among countries can be variability in the cultural factors at play in the patient-doctor relationship. Both the level of communication and the time pressures during the patient visit can impact the degree to which the patient understands the risks and benefits associated with each treatment option. We have found that better patient education leads to greater understanding of the disease process and the limitations of the available therapies. As such, we try to be as transparent and informative as possible when discussing treatment options with patients.

***Would you like to share the latest exploration in the area of intraocular tumors vitreoretinal disease in your lab?***

We are excited about some current studies assessing risk factors for progression of diabetic retinopathy among high-risk populations. We seek to determine whether molecular and genetic markers can provide insight and inform the treatment approach. Additionally, we are interested in factors that impact the integrity of the vitreoretinal interface, as this is a critical site of origin for many vision-threatening conditions. We also seek to repurpose old

drugs that can offer previously unrecognized benefits in the treatment of ocular disease.

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