

# Johanna M. Seddon, MD, ScM

Dr. Seddon is the director of epidemiology at Massachusetts Eye and Ear infirmary, and surgeon in ophthalmology, associate professor of ophthalmology at Harvard Medical School.



## 1. How did you come to choose ophthalmology as a profession?

Although no one else in my family was in the medical profession, I had great support from them to go to medical school. I also had a role model, a female ophthalmologist, who was one of the many surgeons I assisted in surgery during my summer job in college and medical school. Although not a nurse, my role was a *scrub nurse* at the time, and I had been trained to assist surgeons. This particular ophthalmologist told me that the field was very rewarding and how gratifying it is to help people improve their vision. I think a combination of all those things led me to go both into medicine and ophthalmology.

## 2. What do you consider to be the most promising advances currently occurring in medicine for the treatment of age-related eye diseases?

There are tremendous advances in genetics and epidemiology for the treatment of age-related eye disease. These two areas of medicine are complementing each other as it continues to be recognized that genes, environment, and biological factors all contribute to the onset and progression of these complex diseases. In my specialty of age-related macular degeneration (AMD) there is now overwhelming evidence that diet, nutrition, antioxidants and inflammatory factors play a role in disease susceptibility and prevention. In addition, body mass index interacts with genotype and smoking increases risk among different genetic susceptibilities. I think fur-

ther investigation of these factors will hopefully ultimately lead to better means of prevention and treatment.

## 3. What is the current focus of your research?

I am continuing my efforts to apply epidemiologic and genetic methods to the study of AMD. The challenge is to determine what environmental factors lead to the expression of the disease and how to transfer that knowledge into prevention and treatment. Our goal is to help people and decrease the chances of people developing the disease in the future. Ultimately, we want to have fewer people experiencing loss of vision. I am currently working on a nationwide genetic epidemiology study involving 400 families with multiple affected individuals and 840 twins to study some of these factors.

## 4. What challenges/rewards have you had as a woman in a mostly male specialty?

In my career span, women have made great strides in medicine. I've seen women become much more prominent in the field in the past several decades. The numbers of women in medical school, for example, have risen from fewer than 10% of the class to about 50% of the classes today. There are still some hurdles in ophthalmology that remain to be overcome — like in places of leadership — but I think overall, the recognition of women in medicine is increasing.

## 5. What would you like to accomplish over the next 5 years?

I am very dedicated to the projects I am doing now. I would like to continue to further delineate the roles of genes and the environmental factors related to AMD and its progression. I also hope to continue studies to identify new preventive measures and halt the progression of the disease. We already have therapies that are effective for the wet-form of AMD, but they are invasive. I think that noninvasive therapies would be a good goal to achieve in the future. Ultimately, these advances may reduce the development and progression of AMD, decrease the number of people who develop the advanced forms, reduce visual loss and improve quality of life among our elderly population. ■