

Paul F. Palmberg, M.D., Ph.D.

Having completed his residency in ophthalmology, chief residency and clinical and research fellowships in glaucoma at Washington University in St. Louis, Paul F. Palmberg, M.D., Ph.D., and his family were settled into the community and he was quite satisfied to join the faculty there in 1977. He discovered however, that in a city with more than enough glaucoma specialists, his opportunities for dealing with challenging cases would be limited.

So, when Douglas R. Anderson, M.D., Professor of Ophthalmology at Bascom Palmer Eye Institute, approached him about becoming the third specialist in the Institute’s glaucoma service in 1980, Palmberg saw an exceptional opportunity to advance clinically and to combine clinical and research activities. The decision was made easier by Anderson’s clever choice of February as the time for Palmberg, a marathon runner, to leave a dreary St. Louis to interview in balmy Miami.

Palmberg, now a Professor of Ophthalmology at Bascom Palmer, knew early-on that he wanted to follow in his father’s footsteps and become an ophthalmologist. At age 14, he observed his father in surgery and in the office. It was there that Palmberg learned the two most important lessons in ophthalmology: First, to listen carefully to the details of the patient’s symptoms, as that usually leads to the diagnosis; and second, to explain to the patient in lay terms what is going on so that you cannot only dispel unwarranted fears but also gain informed cooperation with treatment.

“I have come up with a lot of analogies between eye conditions and things people already know, and I don’t use technical terms unless I explain them,” Palmberg says. “I credit my father for that.”

While he knew that he wanted to be an ophthalmologist, Palmberg decided at age 19 that he also wanted to be a scientist. “I wanted to find out if being ‘dual-wired’ would let me see connections between science and medicine that scientists or

clinicians were unlikely to come up with independently,” he recalls. With that thought in mind, he made a career plan for his entire life, deciding to become both an eye biochemist and an ophthalmologist.

In 1978, Palmberg found that being “dual wired” was indeed useful, as he drew on his knowledge of biochemistry to introduce an improved solution for maintaining corneas for transplantation. Called *Modified MK Media*, the solution was adopted worldwide.

In 1980, he used a scientific approach to compare how well different methods could detect *retinopathy* (changes in blood vessels in the back of the eye) caused by diabetes. He found that early changes could be detected twice as well with careful scanning of photographs as with a live clinical examination, and that color photographs were just as good as a more invasive technique that required injecting a dye into the veins coupled with photographs. The findings convinced the National Institutes of Health that a trial was feasible to see if diabetic eye and kidney disease could be reduced by tight control of diabetes (guided by frequent home monitoring of blood sugar levels by patients) versus conventional treatment.

Palmberg then served for a decade on the monitoring committee of the Diabetes Control and Complications Trial, a study which concluded in a *New England Journal of Medicine* article in 1993 that tightly controlling blood sugar indeed significantly lowered the risk of retinal and kidney damage in diabetic patients. In an analysis that he suggested, statisticians for the study found that for every point a measure of the average blood sugar was lowered, the risk of eye and kidney disease was reduced 50 percent, all the way down to the top of the normal range.

Palmberg is best known, however, for his role in helping to clarify the relationship between the level of pressure in the eye and how well a glaucoma patient retains peripheral vision. In 1988, in helping to write

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the American Academy of Ophthalmology's guide to glaucoma treatment, he summarized the fairly limited knowledge then available about how glaucoma treatment affected outcomes. In the guide, he coined the term *target pressure* to represent the then poorly defined level of pressure that doctors and patients should try to obtain in order to halt or slow glaucoma damage in an individual patient.

In 2000, Palmberg was co-recipient of the International Glaucoma Review Award for the most significant glaucoma research in the year. He received it for the Advanced Glaucoma Intervention Study paper that showed the surprising and happy result that lowering the eye pressure sufficiently could halt glaucoma damage in nearly all patients with advanced damage, though the ideal level of control was only achieved in one quarter of the patients. “It’s an award I won for being dual-wired,” says Palmberg, “and for asking the right questions.”

According to Palmberg, “So many exciting things have happened in the past decade in the glaucoma field. We now have information from long-term studies to tell us what we need to achieve in order to stabilize patients with glaucoma, and we have very sensitive tests to monitor both the structure and the function of the optic nerve to confirm a stable course. Furthermore, we also have medical and surgical ways of achieving the needed reduction in eye pressure in nearly all cases, and we have learned how to avoid or to fix most complications of surgical treatment. That’s radically good news.”

Now 62, Palmberg hopes in his last decade of practice to develop teaching modules in both English and foreign languages to explain the new concepts for treating glaucoma. “Scientific knowledge has to be converted into a usable form for those in practice and for students.” He has already authored or co-authored 84 journals and book chapters, lectured in 55 countries and trained 52 clinical fellows and 103 foreign observer fellows, with many of the foreign fellows having been hosted by the Palmberg family.

Palmberg, a Presbyterian Elder, marathoner and cyclist, lives in Coral Gables with his wife, Carol. He has three grown daughters, Laura, Elizabeth and Rebecca.