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S C I E N C E O V E R C O M E S
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B Y R O S A L I N O S M I T H





DID YOU KNOW THAT TRUE MIRACLES ARE HAPPENING RIGHT HERE IN NEWTON?

Three-year-old “Gabby” has crawled through the complicated maze at an indoor play center. Just two weeks before, she had faced a lifetime of blindness.

A young physician from St. Louis studying anesthesiology was suddenly blinded by a violent allergic reaction and has just seen her husband and nine year old daughter for the first time. She has been blind for fourteen years. On a recent Dan Rather show she was shown, exclaiming, “So this is what Harry Potter looks like!” as she examines a cover at a local bookstore.

Trapped in darkness for 30 years since the age of five, Kathleen Rogers now holds a management position and has fulfilled her dream to become a photographer of nature.

These are real people with real stories, a few of the hundreds of miracles that Dr. Perry Rosenthal, founder of the Boston Foundation for Sight, has achieved.

"Most of our patients are young," Dr. Rosenthal says, "in the prime of their life, and have no other options to regain vision. With our lens we are able to give them back the potential to rejoin the mainstream of society.

"They come from everywhere. In one week we had a medical student from Jordan, a patient from the Philippines and another from Ecuador. All of our patients must be referred by doctors and must have corneal disease or damage that our Boston Scleral Lens can treat."

What Dr. Rosenthal is referring to is a lens that rests entirely on the white insensitive tissue of the eye rather than on the surface of the cornea. Covering this scleral tissue, the lens bathes the cornea in artificial tears that function as a virtual bandage that will not asphyxiate the cornea but will eliminate the pain and photosensitivity for people with certain kinds of corneal disease and damage, forming a smooth artificial surface to improve vision.

"The cornea," he goes on to explain, "is the most important lens of

our eyes, our window to the outside world, and its surface must be perfectly smooth. If it is irregular it's like taking a camera lens, scratching it, pitting it or rubbing sandpaper over it. When the surface is not smooth, you can't take a focused picture.

"It is also the most sensitive tissue of the human body. We all know how getting a cinder in your eye feels like a boulder. For this reason many of our patients, especially those with inflammatory diseases of the cornea, are not only blind but suffer excruciating pain from the moment they wake until they fall asleep at night. Many become recluses and live in darkness where the light cannot induce pain. Our lenses are able to provide the cushion of tears that protects their cornea and transforms their life. We estimate at least 100,000 patients in the United States alone can benefit from these lenses and we are discovering more all the time."

All of this began by accident as Dr. Rosenthal, who had come from Canada to start his residency in 1959 at the Massachusetts Eye and Ear Infirmary, found it



MIRACLE CURE FOR MOST BUT NOT FOR EVERYONE

DR. PERRY ROSENTHAL'S NONPROFIT BOSTON FOUNDATION FOR SIGHT has cured the blindness of more than 500 patients who have suffered from many (though not all) corneas damaged as a result of injuries and disease. The physician estimates that more than 100,000 persons across the country could have their sight restored through his processes, many of whom were given no hope of regaining functional vision or finding relief from severe constant eye pain and disabling photosensitivity. These include patients suffering from severe dry eyes due to many causes.

While miraculously restoring sight for many, however, Dr. Rosenthal's methods do not restore sight to persons suffering from common forms of blindness such as macular degeneration and other retinal associated problems.

Dr. Rosenthal's team has developed a patented computerized design/manufacturing program that has enabled the Foundation to achieve a success rate exceeding 90 percent.

hard to refuse his professor's request to start a contact lens service at the infirmary as part of his residency program.

"My first patient was a college senior who had developed a relatively common disease called Keratoconus. He was sent to me because it was known that theoretically a hard contact lens could create a smooth layer of tears over the cornea that would mask irregularities. I remember pacing the lenses on his eye for the first time. The student looked up and began reading the charts - lower and lower. It was an emotional moment. So you can

imagine our disappointment when his eyes rejected the lenses, as did those of our next patients. We soon realized that the problem was that the cornea is the only tissue in the human body that breathes by getting oxygen from the air rather than through the bloodstream and our lenses were blocking the supply of oxy-

gen. It became obvious that what we needed was a hard plastic lens that would allow oxygen to pass through it."

The contact lens labs felt that the soft contact lens was the wave of the future. They were not interested in Dr. Rosenthal's theories, so he got together a small team and from 1971 through 1976 he developed his first hard gas-permeable plastic lens that would breath. In 1983 he sold the business to Bausch and Lomb where today the product Boston Lens Solution may be found in every drugstore.

When acrylic plastic was discovered in the late 1980's Rosenthal once more began to research, finding that plastics were becoming more and more permeable to oxygen.

What if we made scleral lenses for patients with diseased corneas, he wondered?

In 1986 he treated his first patient with a contact lens made with the gas permeable material. The patient had been seriously injured, sustaining a ruptured eye. He had poor vision in his second eye. Now the ruptured eye was distorted from being

UMBRACULI IDCARI QUADRUPEL.
OSSIFRAGI IMPUTAT FRAGILIS ZOTHECAS.



sewn together.

"Ground on a small hand lathe, we made our first scleral lens almost totally by hand," recalls Dr. Rosenthal. "It was an outstanding success! The man is still wearing the same lens today and has 20/30 vision."



NINETY PERCENT SUCCESS RATE

THE SUCCESS RATE WAS LOW and Doctor Rosenthal spent the last ten years developing a computer technology that enabled him to precisely custom fit the shape of the individual's eye. Now patented, Rosenthal's success rate is over 90% and the lens was FDA approved in 1994.

The Boston Foundation for Sight has evolved. It is a non-profit organization and only recently has Perry Rosenthal started to take a salary. "This is the work I was meant to do," he says. "Everything up to

then was just commentary. Each procedure costs close to \$8,000 and as of now most health insurers refuse to cover the service. Yet no one is turned away because of their inability to pay, and as a result we are dependent on donations."

The Foundation sees between five and eight new patients a week though some need to remain for two weeks. They are from many walks of life, from different worlds, speaking different languages. But

if you walk into The Boston Foundation for Sight, you sense the magical atmosphere. The bond that develops between the patients, the support system and Dr. Rosenthal is almost palpable.

"Some of our patients cry when they leave," he says. "They hug one another and everybody has a camera and takes pictures. We see the transformation many times a week. But every time it happens it is like the first time. We are all very lucky."

Johnson and Johnson has recently given the Foundation a \$240,000 grant to train doctors at other academic centers and the goal now is to establish a network of affiliated clinics in this country and abroad who will be trained by Dr. Rosenthal and his team in the highly specialized lens-fitting technology.

"We have been profiled on Good Morning America, CBS Evening News, Oprah Winfrey's Medical Miracles, Dan Rather, and segments on all the major networks giving increased public awareness of what we do," says Dr. Rosenthal. "It has also enlarged our waiting list of patients greatly."

We need only to look at the smiling teenager as he holds up his drivers license or listen to a man who is seeing movies, playing tennis and looking up at the clouds for the first time in 30 years. "I know," he says, "that these are things that most people don't think of as being special, but for me it's a dream come true."

The foundation's website is www.boston-sight.org.

The Boston Foundation for Sight is located at 1244 Boylston St., 02467 Suite 202, in Chestnut Hill. Anyone seeking to become involved with the foundation or to seek more information may call 617 735 8698

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