



## Unique Surgery Provides The Gift of Sight

For several years, Patrick Wissing has been working as a marine biologist and as a researcher in aquatic science at Purdue University. Until recently, his project has been studying how to keep fish healthy when they are kept in relatively tight quarters on fish farms.

This has been a landmark year for Patrick since he underwent a cornea transplant July

24th. He was diagnosed with Keratoconus over 10 years ago, about the same time he became a scuba instructor. He remembers that even as a child the kids would tease him about putting his nose up against the computer monitor in order to see. After visiting his optom-

etrust he was referred to an ophthalmologist and learned that his vision loss was caused by Keratoconus (a condition in which the cornea thins and bulges). Patrick tried to work around his visual problems for 5 more years until he realized he could not pass a driver's test and his ability to function was becoming seriously impaired.



Patrick Wissing

Fortunately, Patrick found Dr. Francis Price. After a thorough examination, Patrick was scheduled for a corneal transplant using a unique procedure, the anterior lamellar graft. Dr. Price has been performing this particular procedure for more than ten years. Instead of removing the entire cornea and replacing it, only the outer portion of

the cornea was transplanted. According to Dr. Price the main concern after a transplant is rejection of the inner layer of the donor cornea, known as the endothelium. If that's rejected, the new cornea turns cloudy. With the lamellar graft, you leave the patient's own endothelium in place, so you don't have to worry as much about rejection.

We can stop administering the anti-rejection drops after two weeks instead of several months, and this helps the wound heal more rapidly.

In the near future, Patrick hopes to receive another transplant to correct the vision in his other eye and have his recovery behind him. He also looks forward to returning not only to his favorite pastime, scuba diving but

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## Vision is Key Element When Investing Time

By David Huse

The clinical studies and research projects conducted at the Cornea Research Foundation are not the pie-in-the-sky, might be of use in 10 to 15 years type. Rather, the results from the Foundation's studies are directly applicable to patients today. Whether it's a corneal transplant patient, a cataract patient, a dry-eye or glaucoma patient, the work of the CRFA improves the care and treatment they receive. And ultimately, it gives them the best chance of maintaining this most wonderful gift of sight. It is because of this that I said yes when I was asked to join the Board of Directors of the Cornea Research Foundation of America.

When I was 18, I received my first pair of contact lenses after wearing glasses since second grade. However, 13 years later, my right eye became painful. After months of being refitted numerous times, I was diagnosed as having keratoconus, a

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**2003**

**Foundation Studies**

*Allergy Study*

*Antibiotic Study*

*Artificial Iris Implant Study*

*Artisans Lens Study  
(for severe myopia)*

*Dry Eye Study*

*Glaucoma Study*

*Capsular Tension Ring Study  
(for difficult cataract surgeries)*  
*Keratoconus Progression Studies*  
*Preventing Nearsightedness in*

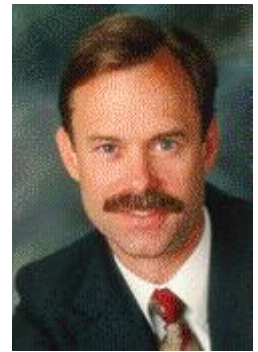
*Children Study*

*Cornea Donor Tissue Study*  
*Cornea Graft Rejection Study*  
*Cornea Transplant Database*

**“ask THE doctor”**

Q: Is there anything that can be done for excessive tearing?

A: Excess tearing can result from a number of problems. The most common is actually decreased tear production, or dry eyes. This may seem the opposite of what you would expect, but when the tear production is decreased, the eye tends to dry out easier. When the eye dries out, it gets irritated and the crying mechanism comes into play. This gushing of extra fluid can cause tearing. Treatments for this include artificial tears, special vitamins and plugging the tear duct. In some cases excess tearing can come from problems with the eyelids or tear duct and drainage system. In those cases surgery can usually be done to fix the problem. The Foundation is currently conducting a study to evaluate a new dry eye treatment. If you're not getting relief from current treatments and want to be considered as a study candidate, please contact our office at (317) 844-5610.



**EYECARE TIPS**

***Additional Nutrients May Aid in  
Macular Degeneration***

Following AREDS findings could improve your quality of life!

Recent findings from the Age-Related Eye Disease Study (AREDS) show that anti-oxidants (vitamins C, E and betacarotene) plus zinc supplements can reduce the rate of progression of age-related macular degeneration (AMD) by up to 25%. AMD robs a person of their central vision which is critical for both reading and driving.

Studies have shown that AMD can cause high levels of emotional distress and a reduced quality of life in most of one's daily activities like reading, watching TV and socializing. As a result, a person's normal capabilities and freedom of movement are severely restricted.

It is estimated that 1.3 million Americans over the age of 55 are likely to develop advanced AMD in the next 5 years. If they all took the AREDS

combination of supplemental vitamins and zinc, the 25% risk reduction in progression to advanced AMD would mean that 329,000 people could enjoy a better quality of life. There would also be a significant reduction in the social costs related to the disease.

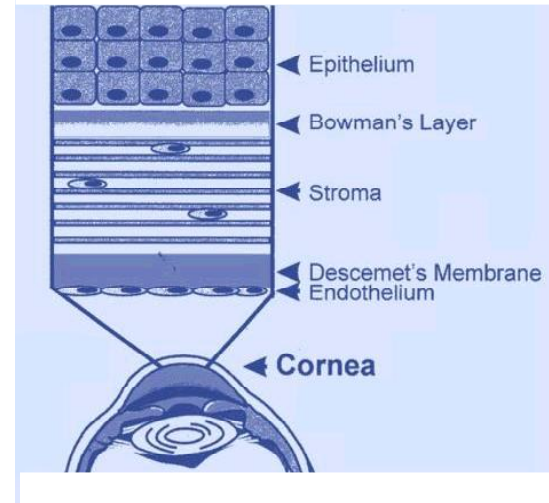
Dr. Price adds a note of caution. For those who smoke, following the AREDS recommendation can actually increase the risk of strokes and heart attacks. A modified vitamin supplementation is suggested for smokers. However for those who do not smoke, new formulations of vitamins either utilizing the AREDS formula or extensions of it offer the best hope we have for stemming the visual loss of age related macular degeneration, a condition that causes visual loss in close to 25% of Caucasians over 75 years of age.



## Test your Eye-Q:

### Why does the cornea have different layers?

Each layer of the cornea serves a different function. The outer layer, known as the epithelium, protects the cornea like a layer of skin. A thick middle layer, called stroma, is made up of collagen and other proteins that provide strength. The innermost layer of the cornea, known as the endothelium, is composed of tightly packed cells that help keep the moisture level in the cornea at precisely the right level so that the cornea stays clear, allowing light through to the back of the eye. Bowman's layer separates the epithelium from the stroma, and Desemet's membrane separates the stroma from the endothelium. Nerves passing through the cornea trigger blinking and tear production to keep the cornea clean and moist.



### New Research Microscope Adds Exciting Level to Our Capabilities

The Cornea Research Foundation of America has recently acquired a state-of-the-art confocal microscope that shows individual cell layers in patients' corneas. Previously, a piece of the cornea had to be removed as a biopsy or at autopsy in order for a pathologist to examine the cell layers in the laboratory. Now, with the confocal microscope, we can look at the cell layers in a living eye without any discomfort or risk to the patient.

The Cornea Research Foundation has the only confocal microscope in the state of Indiana. By focusing on one small area at a time, the confocal microscope shows the layers of the cornea at high magnification. This new microscope will help us track the changes that occur in various corneal conditions, such as keratoconus or Fuchs' dystrophy. It will also allow us to identify and study the cause of eye infections.

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bulging deformity of my cornea. As the bulging got worse, the contact would rub on the cornea causing pain. At the time, I was teaching Small Animal Surgery at the Purdue University School of Veterinary Medicine. The keratoconus began to interfere with my work. The longer I wore the lens, the worse the pain became. This resulted in light sensitivity and headaches, which made performing surgery difficult. Without the contact, I was essentially blind in that eye and lost my depth perception. This is not a good thing when operating on someone's beloved family pet. Fortunately, my optometrist referred me to Dr. Price. He was able to fit lenses for about a year, until the bulge in my cornea became too large. I was put on a waiting list for a corneal transplant. Although apprehensive about the surgery, I knew there were no

alternatives. If I wanted to see out of that eye, I had to undergo the transplant. In less than a week I received the call,



and 24 hours later I had a new cornea. Two days later, I was able to wake up and read the alarm clock for the first time in 30 years. A week later I was back teaching and operating again. Eight years later I underwent another transplant in my left eye. Again, the team of a generous cornea donor, Dr. Price and his staff gave me back essentially normal vision.

Now, it's 8 years later and it's hard

not to take my vision for granted. It's there day in and day out. It allows me to serve my patients and their families in my work as a nuclear medicine technologist at Riley Hospital for Children. It gives me the privilege of seeing those I love and cherish: my wife, my family and friends, and my dogs. Through it, I experience the glorious wonders of the natural world. With it, I am able to read the music I love to sing in the church choir or to play on my hammered dulcimer. Thanks to Dr. Price and his staff, I am blessed with these gifts through my restored eyesight.

#### LOOK HOW FAR WE'VE COME!

Thank you again  
William & Mary Goetz

for the seed money you  
donated in 2000 to start our web site!

[www.cornea.org](http://www.cornea.org)



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to a life of better vision, as well. As more and more information about visual disabilities becomes available and better techniques are developed to aid in surgical procedures, the Cornea Research Foundation of America believes that the gift of sight will become more readily accessible to more people. We wish Patrick the best of luck and share in his enthusiasm for a life of better vision. We also hope that his new gift of sight will enable him to continue his quest to eliminate a problem affecting fish farmers around the world.

*His project has been working on salmonoids, which are salmon, trout,*

*and char. Although it may sound a bit unique, this study is very important to fish farmers globally. It seems that more and more fish today are farmed in smaller areas than they would be if left in a natural environment. As they become stressed, they release a particular hormone (cortisol) that reduces their immune system. If they release too much they become sick and die. "But you can't fish farm and make a profit at it without keeping fish in small areas," he said. Just being a marine biologist in Ft. Wayne, IN. alone exemplifies this man's sense of humor.*

**Mark Your Calendars  
and  
Save the Date  
for the  
2004 Cornea Golf Classic**



**Thursday, June 10<sup>th</sup>  
Plum Creek Country Club  
Reserve your foursome**