

# Radial Keratotomy Fact Sheet

## Editor's Note

*The controversial surgical procedure called Radial Keratotomy (or RK) is now being talked about widely, not only in professional publications, but also in the public media as well.*

*Coverage in the latter has ranged from a segment on ABC-TV's "20/20" program to local newspaper advertising by surgeons. It has prompted many patients to ask their optometrists for the facts about RK.*

*The Board of Trustees of the American Optometric Association recently developed and circulated to all AOA members the following fact sheet on RK. This*

*surgical procedure to "cure" nearsightedness is still experimental and its long-term effects are not known.*

*To help you communicate effectively with your patients about Radial Keratotomy, the CJO is also publishing the information sheet, "What You Should Know About Radial Keratotomy".*

*"What You Should Know About Radial Keratotomy" can also be ordered in pads of 100 from the AOA's order department, 243 North Lindbergh Blvd., St. Louis, MO 63141, USA. The cost is \$5.00 (US\$) per pad, plus shipping.*

## What You Should Know About Radial Keratotomy

### What is Radial Keratotomy?

Radial keratotomy is a relatively new surgical procedure used to reduce nearsightedness (myopia). The National Eye Institute considers it investigational and is conducting a five-year study of its effectiveness and safety. The surgery is available now on a limited basis but generally is not covered by medical insurance.

### How does Radial Keratotomy Work?

To understand how radial keratotomy works, let's first look at how the eye works. In the normal eye with 20/20 (6/6) vision, the lens inside and the cornea (the clear outside surface of the eye covering the pupil and iris) work together to focus light rays on the retina located at the back of the eye. In the nearsighted eye, the light rays are focused in front of the retina, resulting in blurred vision when looking at far distances.

During radial keratotomy, the surgeon makes eight to sixteen freehand cuts in the cornea, like spokes in a wheel. These cuts cause the cornea to flatten and, as a result, the focusing of the light moves backward toward the retina. The operation is done under local anesthesia.

The length of healing time varies from several months to several years. Post-operative pain, sometimes requiring pain relievers, usually lasts only for a few days, however.

### Does Radial Keratotomy Eliminate the Need to Wear Glasses or Contact Lenses?

Radial keratotomy usually reduces nearsightedness but the results are unpredictable for each individual.

Generally only those who are mildly nearsighted may be able to see clearly at far distances without

glasses or contact lenses after radial keratotomy. Others still need to wear prescription lenses, although their lenses may not need to be as strong. Some people are overcorrected and end up wearing glasses or contact lenses for farsightedness.

Many radial keratotomy patients find their vision fluctuates, often being better in the morning than at night. They may need to wear prescription lenses at least part of the time.

Also, other vision problems requiring treatment with prescription lenses may exist along with nearsightedness. Two of the most common are astigmatism and presbyopia (a loss of focusing ability of the eye's lens that occurs after age 40 and affects reading vision). Even with radial keratotomy, most people eventually need glasses or contact lenses for other vision problems.

### Are There any Side Effects with Radial Keratotomy?

Yes. The most common are fluctuating vision; sensitivity to glare or light; difficulty seeing at night, and earlier onset of presbyopia. Also, surgical scars on the cornea sometimes make it impossible for some people to wear contact lenses.

### Are There any Risks with Radial Keratotomy?

There are risks with any kind of surgery. Those involved with radial keratotomy include infection; accidental cutting of the optical zone, that is, the center part of the eye; and perforation of the cornea. All could result in a partial or total loss of vision.

Long-term risks of radial keratotomy will not be known for another decade or two. There is concern about the possible development of corneal diseases and the ability of the eyes to withstand cataract surgery, if that became necessary for the patient 20 or 25 years from now.




An older form of radial keratotomy, performed in Japan in the 1940s, resulted in the development of a degenerative corneal disease that did not appear until 10 to 20 years after surgery. The disease gradually blinded 70 percent of those participating in the follow-up study. Corneal transplant surgery was, for the most part, unsuccessful in treating these people.

### **What other Options are There for People with Nearsightedness who do not Want to be Bothered with Glasses or Contact Lenses Every Day?**

Extended-wear contact lenses eliminate much of the bother of daily-wear contacts and may be a practical solution for many nearsighted people. Optometrists can provide up-to-date information on the newest types of extended-wear lenses.

### **When Should a Person Consider Having Radial Keratotomy?**

As with all surgery, radial keratotomy should be considered only as a last resort. Anyone who can achieve satisfactory vision for everyday living with glasses or contact lenses would be wise, at this time, to continue with them.

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### **CAO 1987 Biennial Congress**

The 1987 "Merry-time Mingle" in Saint John, NB is fast approaching and the Education Committee is in the preliminary stages of lining up speakers.

We would like to ask all CAO members with a suggestion or recommendation for topics and/or speakers for the Committee to consider to forward these suggestions to:

Dr. Richard E. Lee  
 Education Committee  
 CAO 1987 Biennial Congress  
 c/o 512 George Street  
 Fredericton, NB  
 E3B 1K1