

# Iris and Ciliary Body Melanoma

## Standards, Innovations and Future Directions

### What you need to know!

The methods for diagnosis of patients with iris, iridociliary and anterior uveal tumors have changed. Herein, these changes are described along with why they are important for your patients.

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## Iris and Ciliary Body Tumor Resection: Surgeries of the Past for Melanoma?

Surgical iridectomy or iridocyclectomy is rarely needed for an iris or iridociliary melanoma. As compared to an external application of plaque radiation therapy, intraocular surgeries carry greater risk of intraocular infection, hemorrhage, retinal detachment and cataract. In addition, removal of the iris typically results in a large “key-hole” pupil, affecting vision, and causing glare.

In contrast, ocular radiation therapy offers preservation of the iris and its function. Eye cancer specialists used to worry about radiation retinopathy or corneal opacity. However, with over 30-years experience with this technique, Dr Finger has found that cataract is the primary complication and these lens opacities can be easily repaired with standard cataract surgery. The risk of loss of vision is minimal.

### Iris Tumor Types

**Cysts** Most cysts are located at the iris root and cause bulging of the iris stroma

**Nevi** These tumors are common and should be differentiated from melanoma

**Melanoma** Both vision and life threatening, these tumors can now be safely treated

**Metastasis** Most patients will present with a history of systemic metastases.

**Others** Many different tumors occur in the anterior segment and can be differentiated.

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High frequency ultrasound imaging (UBM) is commonly used to measure tumor regression after ophthalmic plaque radiation therapy.

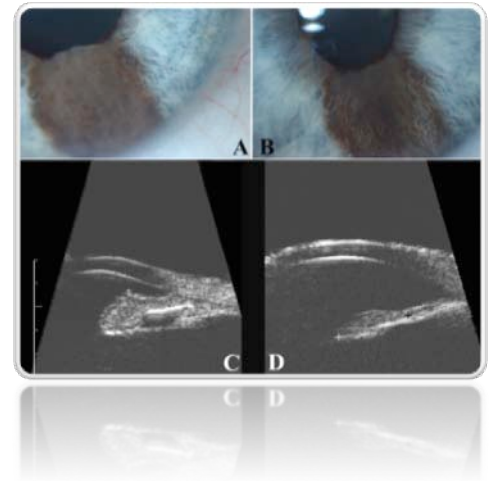
## High-frequency Ultrasound Imaging for Anterior Segment Tumors

The advent of high-frequency ultrasound imaging (also known as UBM) has revolutionized the practice of ophthalmology and ophthalmic oncology. We can now visualize and measure eyelid, conjunctival, iris, iridociliary and anterior uveal tumors.

Many patients with iris cysts are sent to The New York Eye Cancer Center and noted to have a bulging iris stroma. UBM typically reveals a cystic mass just posterior to the iris root that induces focal angle closure. Complete 360-degree examination of the anterior segment may reveal multiple additional neuro-epithelial iris cysts. However, sometimes the bulging iris is an advancing edge of a malignancy, an iris pigment epithelial cyst or the result of ocular inflammatory disease. Clearly, UBM has allowed us to “see” in previously obscure parts of the eye.

Researchers at The New York Eye Cancer Center originally described its use for measurement of anterior melanomas before and after plaque radiation therapy.

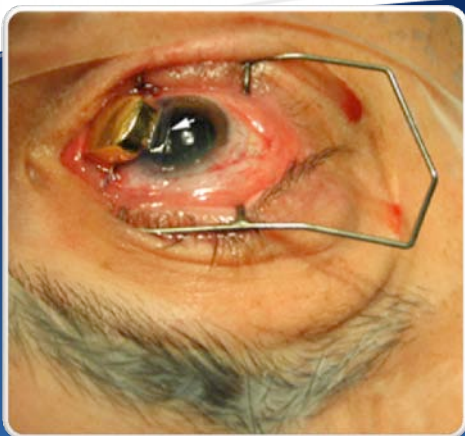
***High-Frequency Ultrasound Characteristics of 24 Iris and Iridociliary Melanomas: Before and After Plaque Brachytherapy.*** Finger PT, Reddy S, Chin K. Arch Ophthalmol 2007;125(8):1051-1058.



### Melanoma of the Iris Before Plaque and 14 months later

We use slit lamp photography and high frequency ultrasound imaging to assess and document tumor regression. Note that the cornea is clear despite radiation. We have found the cornea to be particularly resistant to radiation.

Note preservation of the iris and pupil as seen with Pd-103 radiation therapy.



This is an image of Dr. Finger's- specially designed gold eye plaque surgically attached to the eye wall above a malignant melanoma of the iris and ciliary body prior to closure (being covered with a Gunderson flap for comfort).

## Eye Plaque Irradiation

This photograph demonstrates how an eye plaque can be placed onto the cornea as to treat a portion of the iris. Based on high-frequency ultrasound imaging (UBM) we calculate how deep the radiation needs to penetrate in order to destroy the underlying malignancy.

Dr. Finger originally described this technique in 2001. At that time he had followed patients for almost 10 years with more than 90% keeping within 2 lines of their original vision and no significant corneal damage.

He now has over 30 years of experience with this technique and has found it to be a both a safe and effective method to destroy iris and iridociliary melanomas.

# The Finger Iridectomy (FIT) “tumor-biopsy” Technique

*Iris tumor biopsy gives the doctor and patient pathology confirmation of the clinical diagnosis.*

*With the advent of 25 and 27-gauge aspiration cutters, Dr. Finger realized that compared to using needles FIT offers safer, well-controlled biopsies.*

Tumors can form in the iris and extend from the ciliary body into the front of the eye (anterior segment). When they are documented to grow, are large and causing problems or are suspected of being malignant your eye cancer specialist may suggest a biopsy. Though the eye examination can be very accurate, having a pathologist look at a piece (biopsy specimen) can help make sure and allow for genetic analysis of the tumor.

In the past, a sharp needle has been inserted through the cornea as to pierce the tumor and aspirate cells. This is called fine-needle aspiration biopsy (FNAB). Though one center has reported 100% success with FNAB, most centers don't.

Recently, Dr. Finger has introduced a newer, safer and more efficient technique using a small rounded tubular-shaped device called an "aspiration-cutter" to biopsy tumors. This device has a small window on one side that is used to draw-in and slice off little bits of tumor. This not only provides cells for the pathologist, but also offers little pieces that can be examined with special immunopathology techniques. It is called the "Finger Iridectomy Technique - FIT."



*“Only the Finger Iridectomy Technique allows for a partial thickness iris biopsy through a sub millimeter self-sealing corneal incision.”*

**Side Effects / Complications:** With any intraocular surgery, there is always a small chance of infection, hemorrhage, cataract, or other side effect. However, with small incision FIT surgery these risks are very low.

**Post Treatment Care:** Post-operative care depends on the type of surgery performed. The small incision techniques typically require corneal wounds so small that they do not even require stitches (sutures). However, we prescribe antibiotic, pressure lowering, steroid and relaxing (cycloplegic) medications to maximize comfort and minimize your risks of infection and inflammation.

## ***The Finger Iridectomy Technique: Small Incision Biopsy of Anterior Segment Tumors.***

*Finger PT, Latkany P, Kurli M, Iacob C*

*The British Journal of Ophthalmology 2005;89:946-949*

## ***Small Incision Surgical Iridotomy and Iridectomy.***

*Finger PT. Graefes Arch Clin Exp Ophthalmol.*

*2006;244:399-400.*

## ***The Finger Iridectomy Technique for Glaucoma.***

*Finger PT British Journal of Ophthalmology*

*2007;91:1089-1090.*



### Continued from page 1

We currently use palladium-103 ophthalmic plaque radiation therapy for all cases of iris and iridociliary melanoma. This is because pre-operative comparative radiation dosimetry typically reveals that the selection of palladium-103 will offer a dose reduction of 30-40% to the macula and optic disc compared to iodine-125 plaque therapy.

The gold of the eye plaque absorbs over 99.75% of the radiation directed out and to the sides of the plaque. Therefore, there is less dry eye and no eyelash loss.

Dr. Finger makes very effort to minimize irradiation of normal tissue. This is why he has designed custom-shaped plaques. Depending on the size and shape of the tumor, plaques are selected to treat the tumor plus a margin of normal appearing tissue to prevent a miss.

Dr. Finger published on 400 cases of palladium-103 ophthalmic plaque radiation therapy in the scientific journal, OPTHALMOLOGY. He found a local control rate (rate of killing the tumor in the eye) of 99.8% and that most of patients his retained useful vision. This track record was better than most all published series.

#### ***Palladium-103 Ophthalmic Plaque Radiation Therapy for Choroidal Melanoma: 400 Treated Patients.***

*Finger PT, Chin KJ, Duvall G et al. Ophthalmology 2009;116:790-6.*

#### ***Tumour Location Affects the Incidence of Cataract and Retinopathy after Ophthalmic Plaque Radiation Therapy.***

*Finger PT. Br J Ophthalmol 2000;84:1068-70*

#### ***Plaque Radiation Therapy for Malignant Melanoma of the Iris and Ciliary Body.***

*Finger, PT Am J Ophthalmol 2001;32:328-35.*

#### ***Anterior Segment Tumors: Current Concepts and Innovations.***

*Marigo FA, Finger PT Surv Ophthalmol. 2003 Nov-Dec;48(6):569-93.*

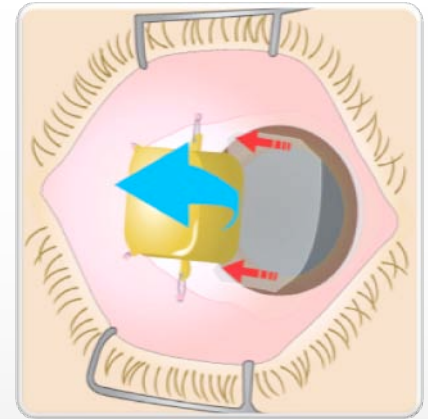
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### Finger's Amniotic Membrane Buffer Technique

Dr. Finger has published his findings on radioactive eye plaque therapy for iris and iridociliary melanomas. With over 20-years follow up, he found that his treatments offered excellent local control with preservation of the iris and long-term clarity of the irradiated cornea.

In contrast to surgical removal, plaque therapy was done on the outside of the eye, with almost no risk of intraocular hemorrhage or infection. It preserved the normal iris function. Unlike intraocular surgical resection, larger margins could be treated.

Unfortunately, having a gold-metal plaque sewn to the cornea for 5-7 days was very uncomfortable.

This is why Dr. Finger first used a paper-thin piece of donor amniotic membrane as a buffer between the metal plaque and the cornea. Finger's amniotic membrane technique both improved patient comfort and protected the cornea.

***Finger's Amniotic Membrane Buffer Technique.*** *Finger PT Arch Ophthalmol 2008;126(4):531-4.*

# About Paul T. Finger, MD

In his efforts to save life, conserve eyes and vision; Dr. Finger has pioneered the use of palladium-103 plaque radiation for choroidal melanoma, the use of high-frequency ultrasound imaging for intraocular tumors, and has created world-renowned web site (e.g. <https://eyecancer.com>).

Dr. Finger has developed new methods for the diagnosis and treatment of many ocular tumors, holds several patents and has written hundreds of scientific publications. Dr. Finger lectures frequently at local, national and international meetings.

Dr. Finger is board certified by "The American Board of Ophthalmology" and is a Fellow of both the American College of Surgeons and the American Academy of Ophthalmology and cares for patients from all over the world.



Dr. Finger is the Chair of the American Joint Committee on Cancers - Ophthalmic Oncology Task Force and Director of The New York Eye Cancer Center.  
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Please consider donating to the Foundation!

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