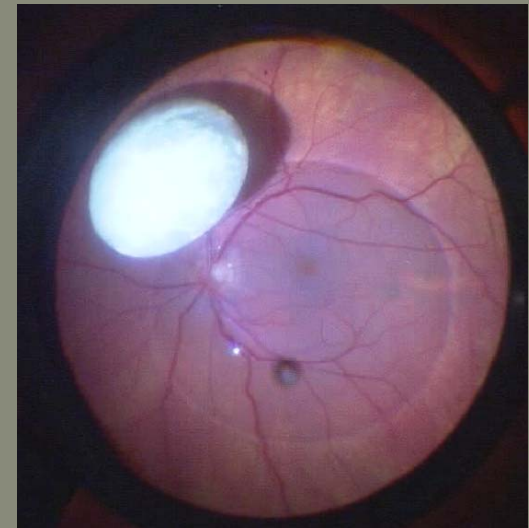
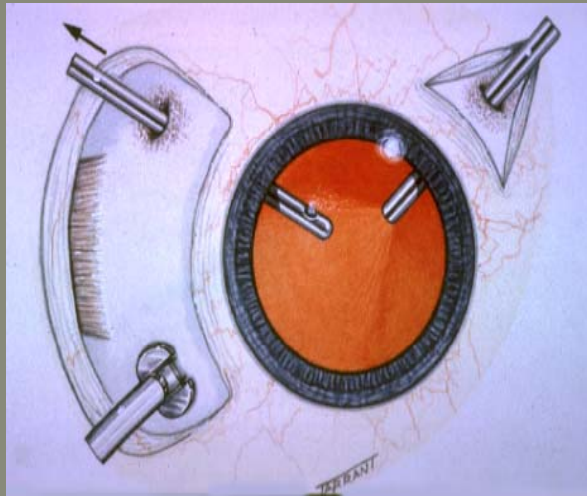


Vitreoretinal Surgery

Mr Vaughan Tanner

www.tanner-eyes.co.uk



Reading

Royal Berkshire Hospital
Dunedin Hospital

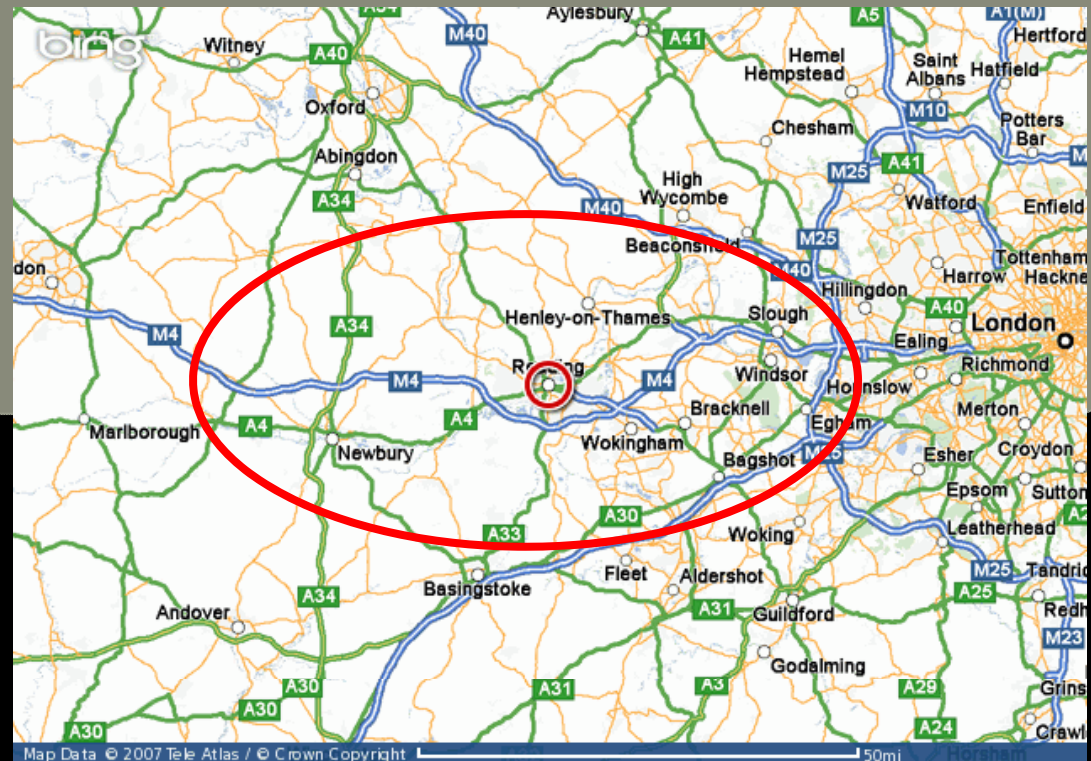
Windsor

Prince Charles Eye Unit
Princess Margaret Hospital

Introduction

- Success rates VR surgery improved dramatically over last 10-15yrs
- Morbidity and risk is much less
- Threshold for surgery is lower
- Increasing indications – macular
- Volume of work is increasing

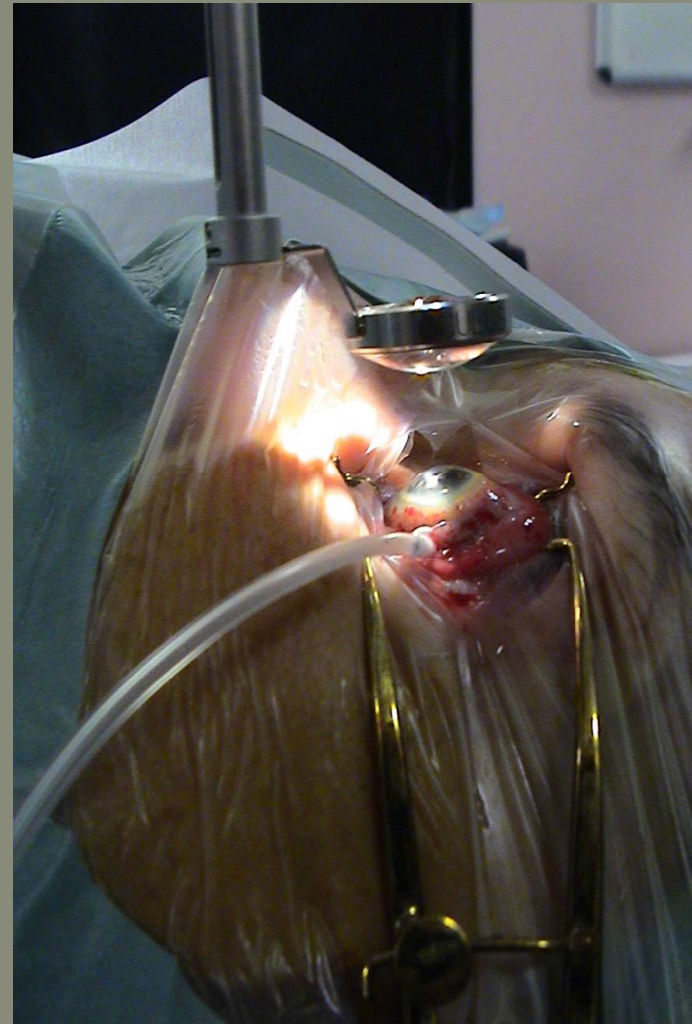
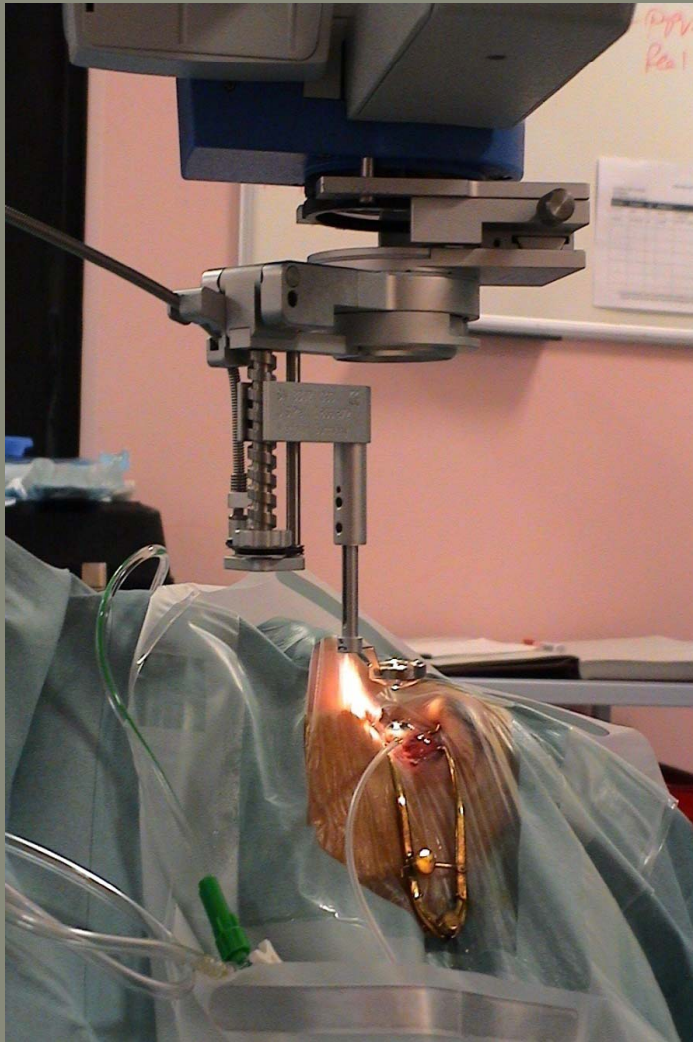
Workload



Population > 1 mill
Berks, S. Bucks, S. Oxon, N. Surrey, N. Hampshire
4-500 cases a year
(1990-91 = 50 cases)



Wide angle viewing system



Day Case Surgery

- Leading units nationally
- Fully day case at Windsor
- 80% at Reading

Feasibility of day-case VR surgery

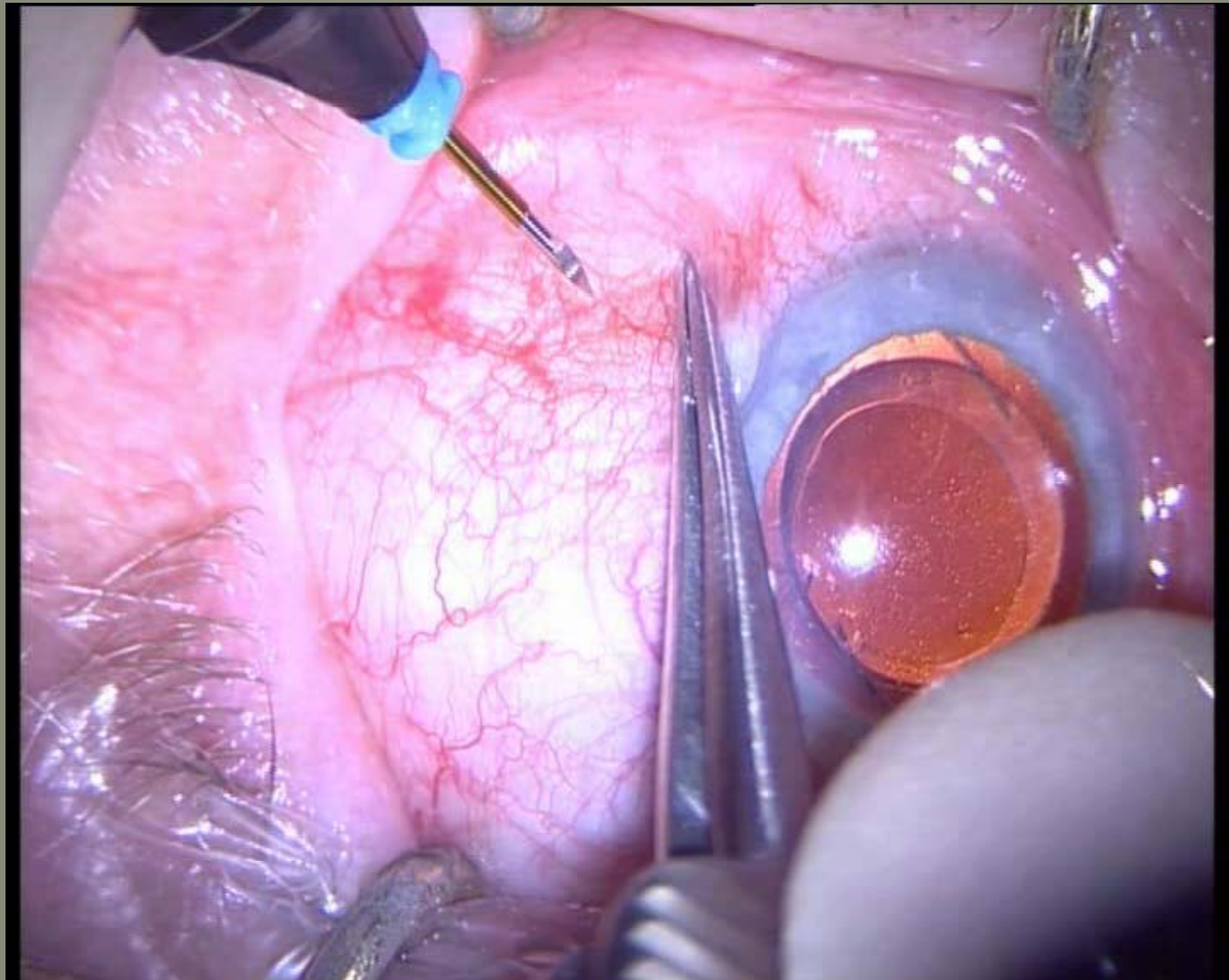
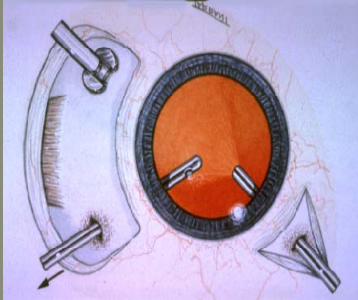
Desai A, Rubenstein A, Reginald A, Parulekar and Tanner V.

Eye 2008; 22,169-172

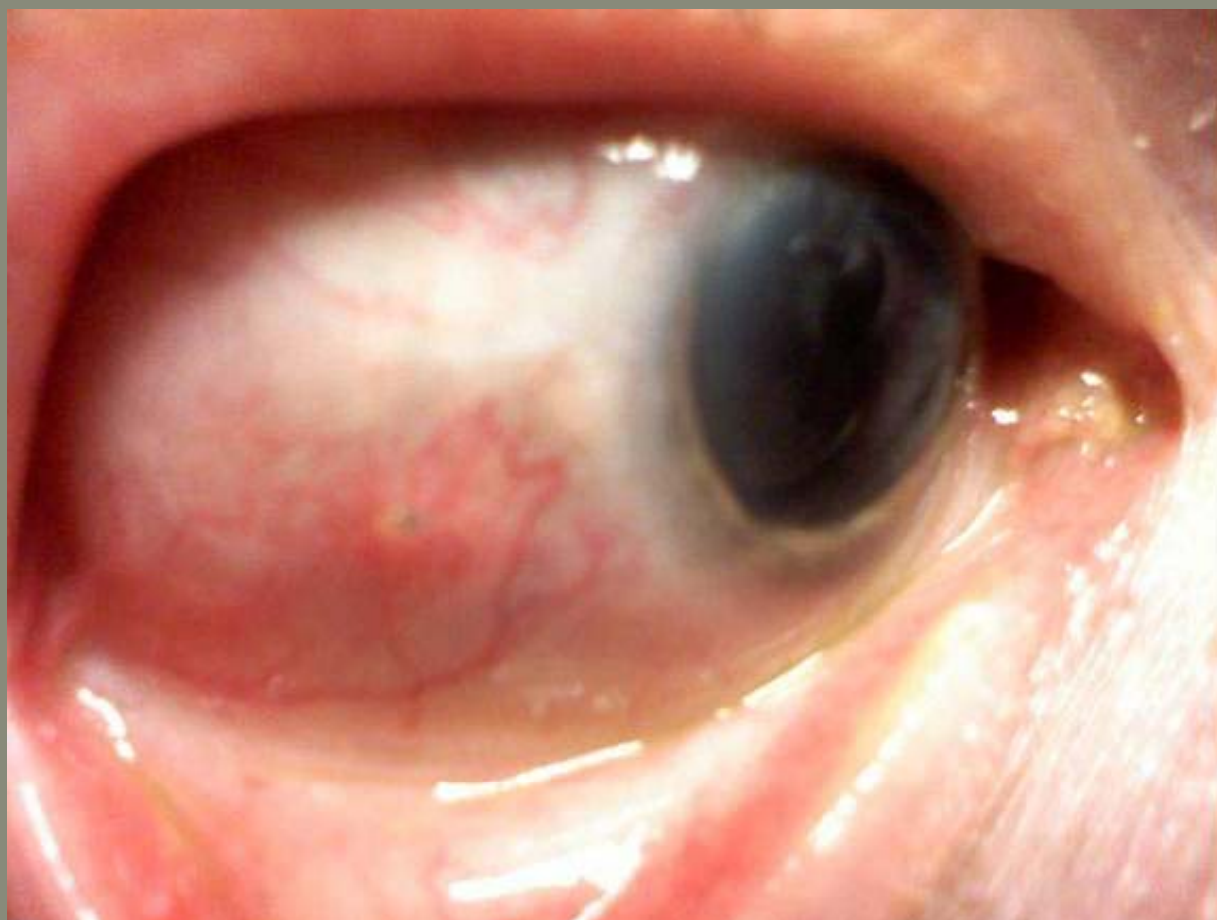
Local Anaesthesia

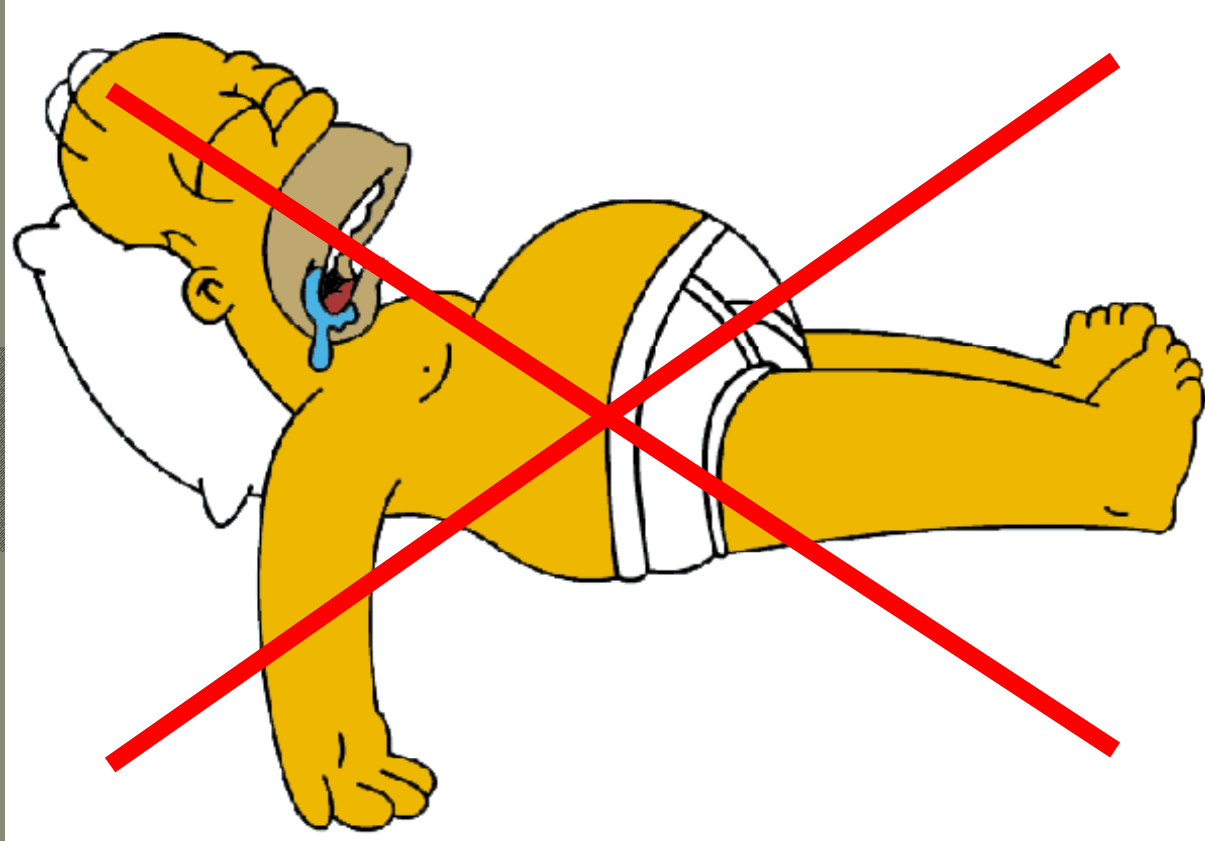
- 75% sub-tenons local anaesthesia
- Walk out almost as quickly as topical anaesthetic cataract case
- All patients seen at 1 week

Small incision - 23 gauge vitrectomy system (0.7mm)

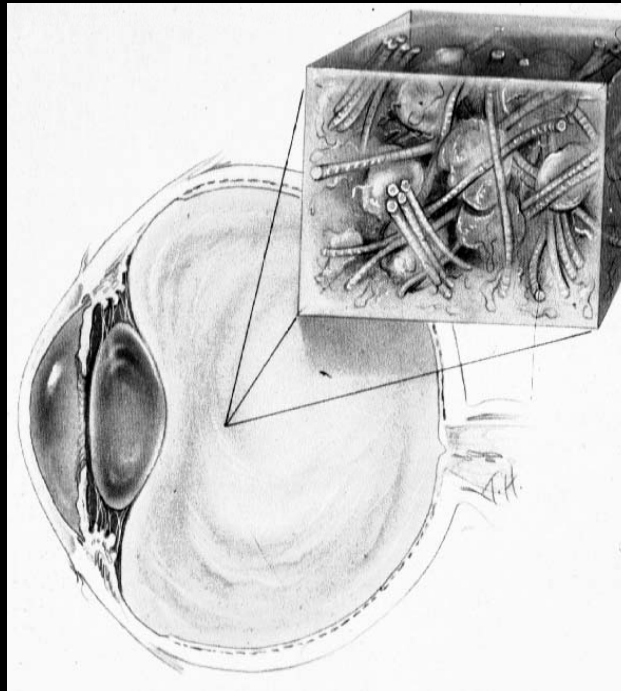






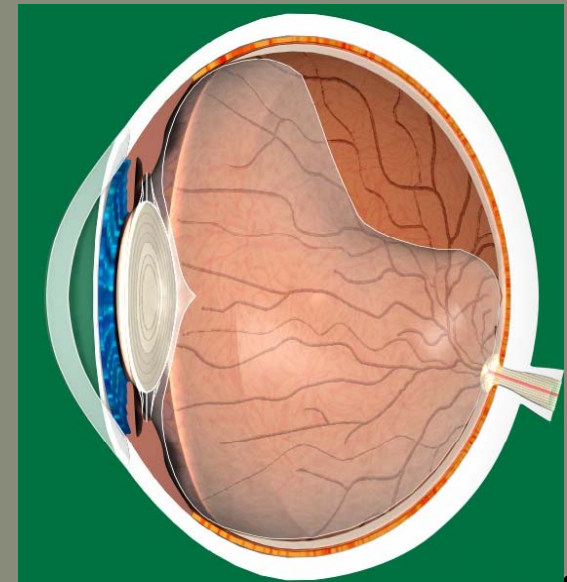
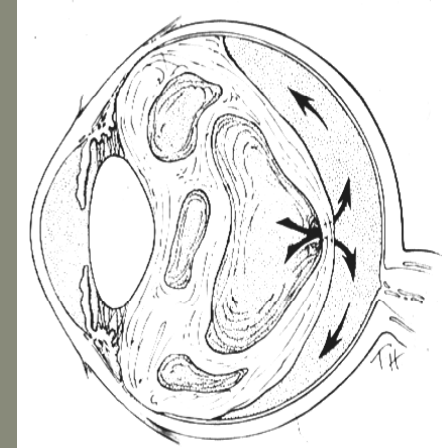


Posterior Vitreous Detachment (PVD) 'Flashes and Floaters'



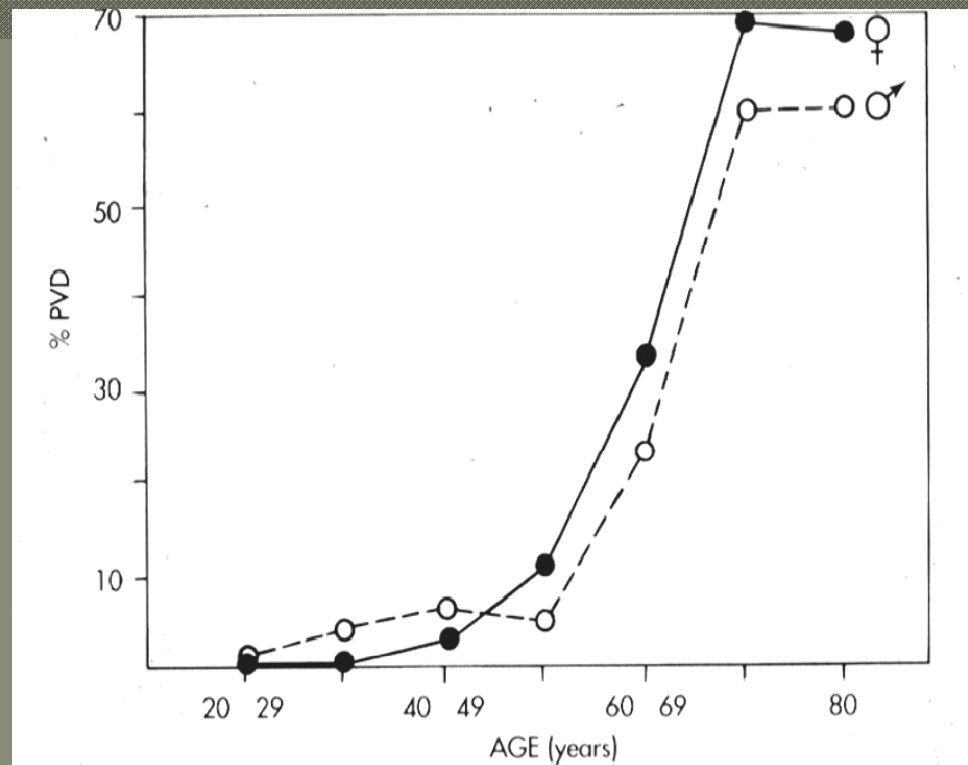
Vitreous Degeneration

- Central areas of liquefaction
- Collagen framework collapses
- Leads to PVD
- Earlier in high myopia, trauma and inflammation

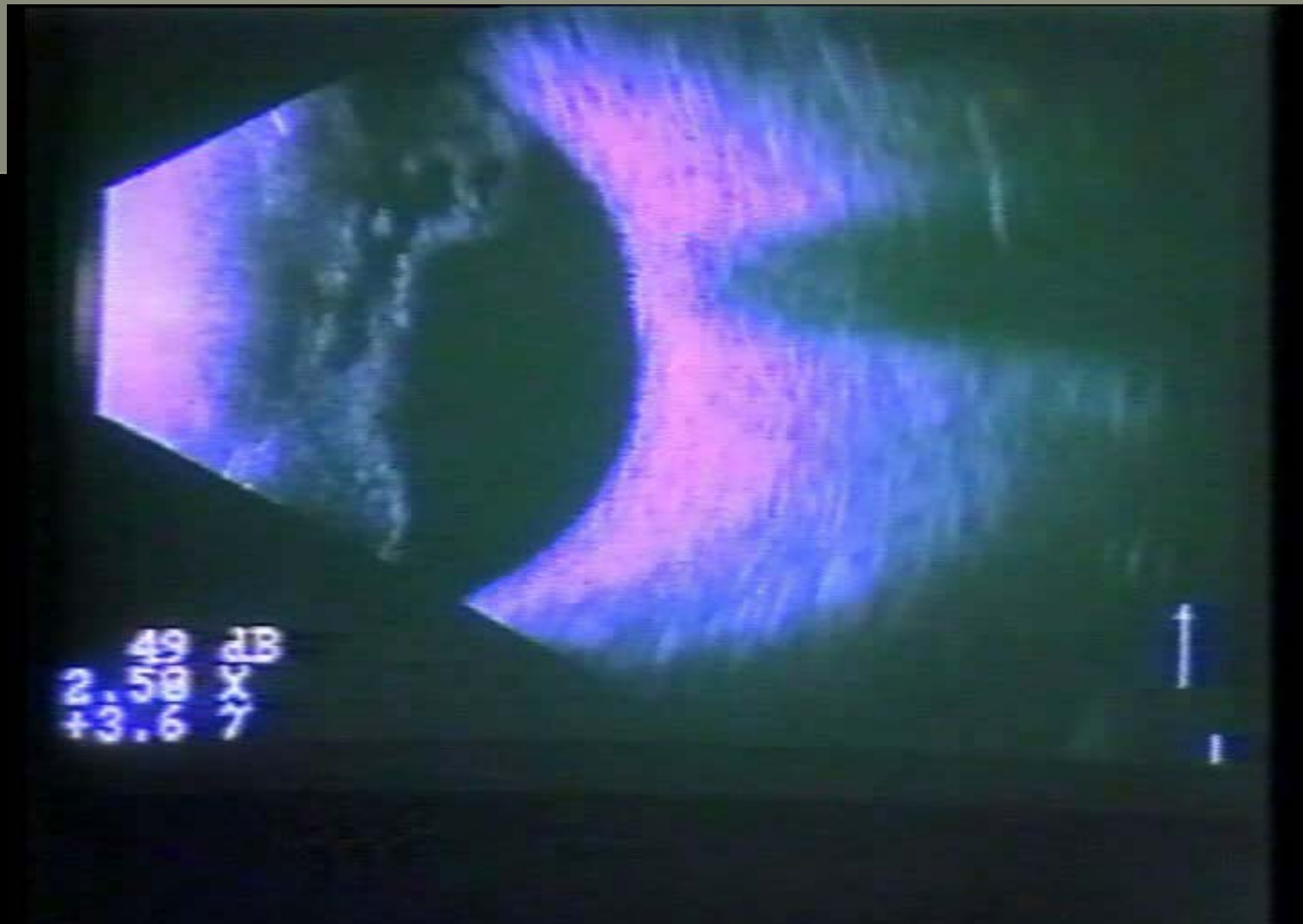


PVD - Incidence

- Approx. 30% in 60Yr
- Approx. 60% in 70Yr



Posterior Vitreous Detachment –Ultrasound

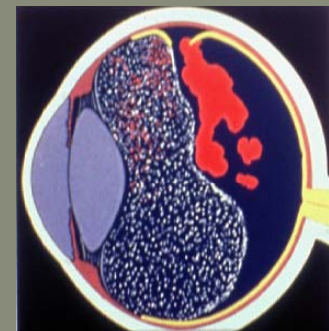
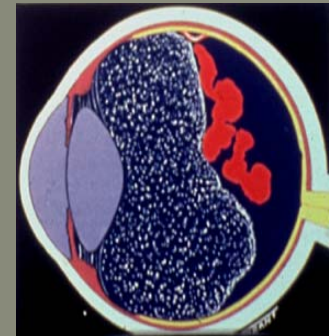
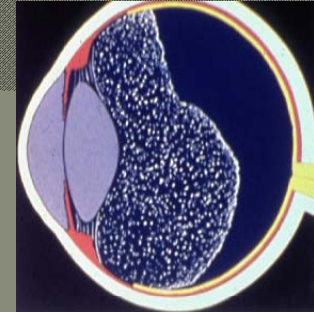


Flashes and Floaters

- When to refer ?
- Are flashes more indicative of associated break ?
- Are lots of floaters more indicative of associated break ?
- How long is high risk period for break ?

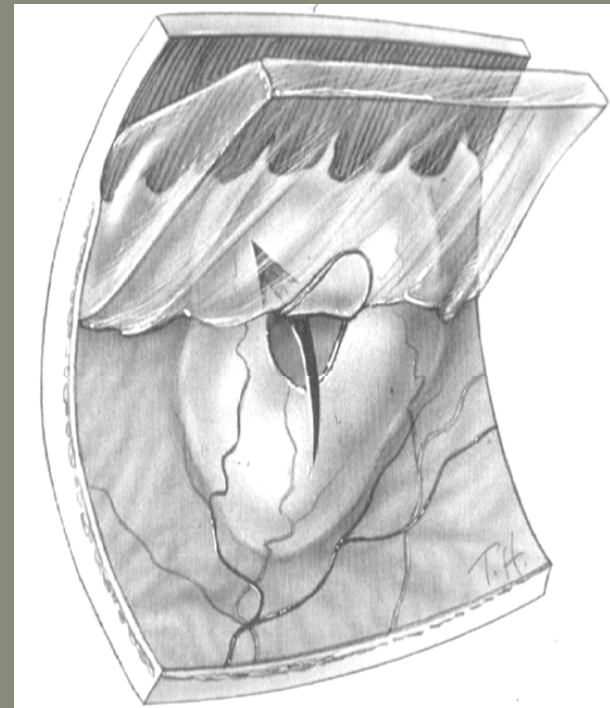
PVD - Sequelae

- Floaters - multiple, solitary
- Haemorrhage
- Retinal tear
- Symptomatic, acute PVD
approx. 12.5% retinal tear
- Pigment cells released
- Epiretinal membrane

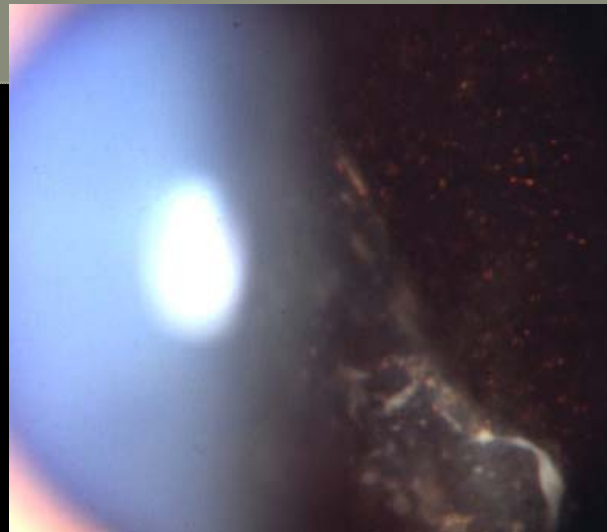


PVD - Tear Formation

- Persistent traction - horseshoe tear
- Rotational eye movements
- Retro-hyaloid fluid driven into tear
- Retinal detachment



Acute Posterior Vitreous Detachment - the predictive value of vitreous pigment and symptomatology



V. Tanner et al,
British Journal of Ophthalmology. 2000;84:1264
Optometry in Practice. 2000;1:97-102

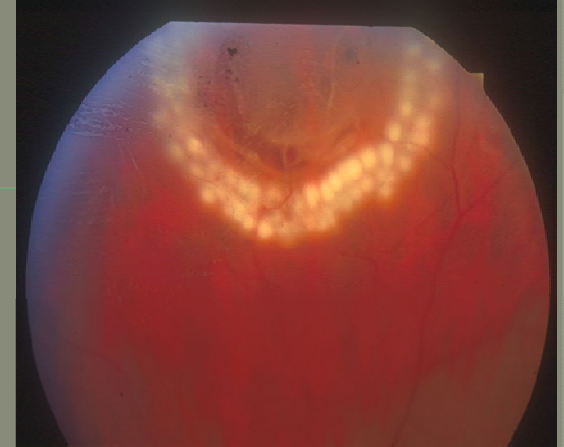
Conclusion

- Syptomatology is not predictive of retinal break – refer all if recent onset symptoms
- Vitreous pigment and retinal break
 - Sensitivity of 95.8%
 - Specificity of 100%

Tobacco dust



Flashes or Floaters

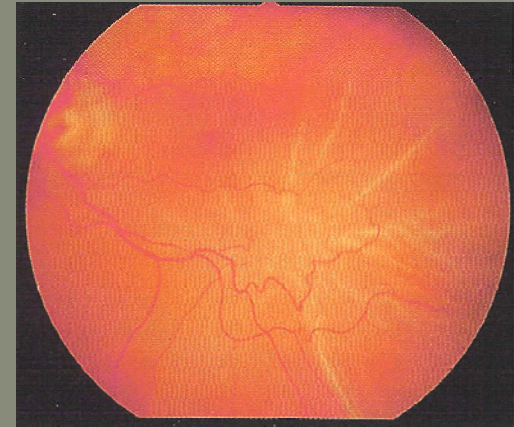
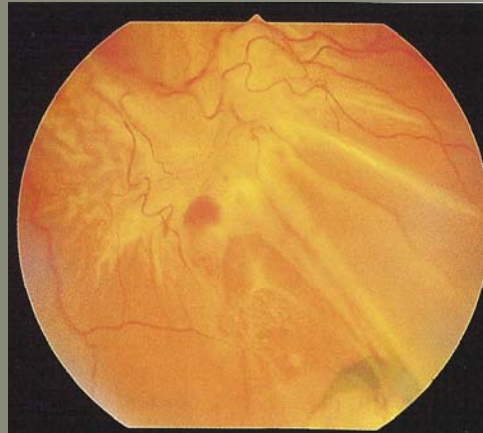
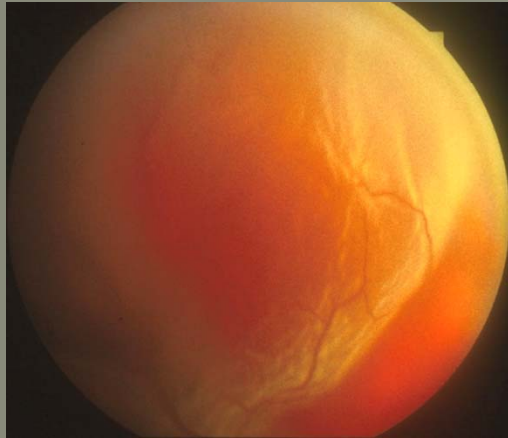


- Less than 1 week – see next session in eye casualty
- Less than 1 month – eye cas or urgent OPD
- More than 1 month – soon OPD
- More than 3 months – probably OK from retinal detachment but if floaters troublesome consider vitrectomy surgery

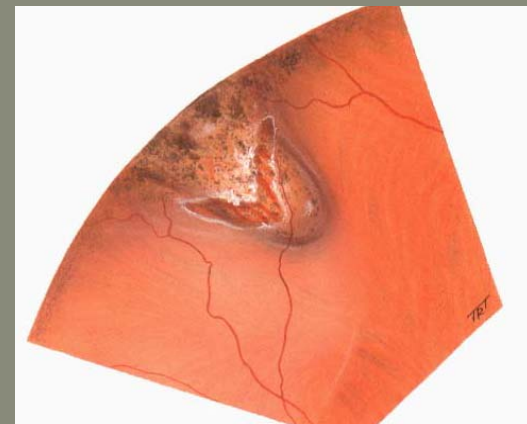
Vitrectomy Surgery for Floaters

- Yag laser occasionally successful
- If remain troublesome for more than 6 months – obscuring text, computer use, driving, “madness” – vitrectomy
- 23g system, rapid rehab, seeing well one week, happy patients
- Warn cataract development if over 50 yrs
- 2% risk

Retinal Detachment

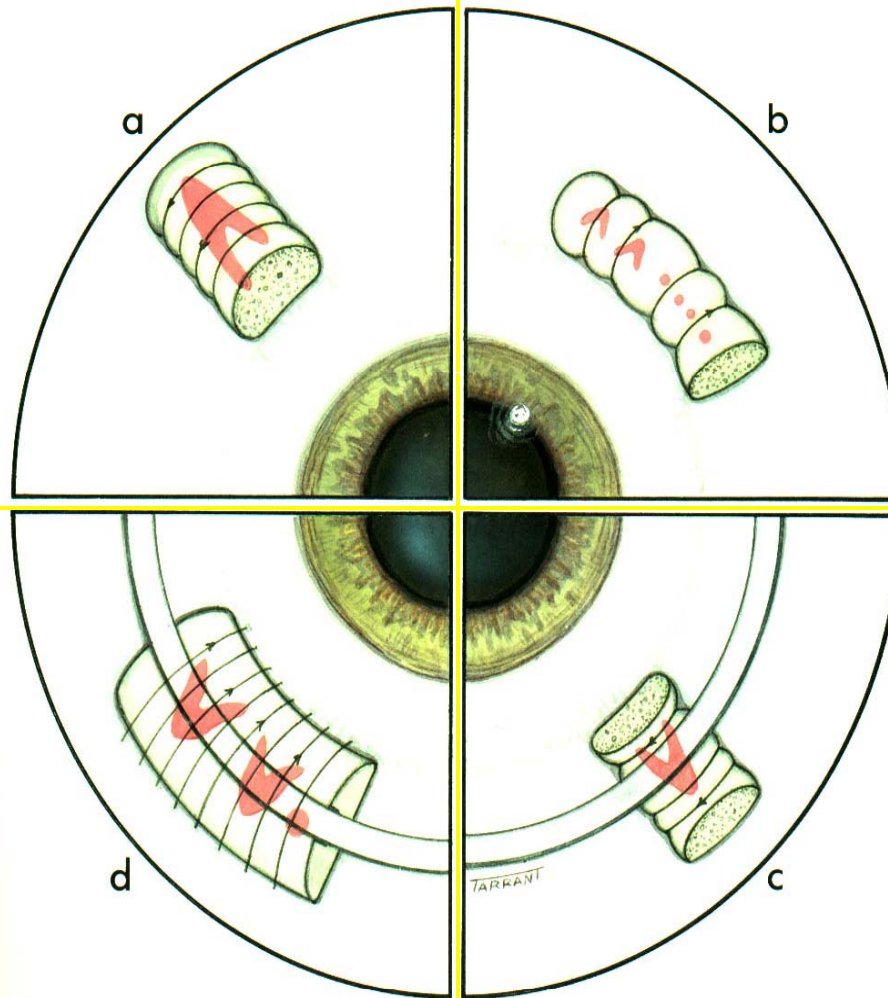


- Cryotherapy and scleral buckle
- Vitrectomy



Configuration of scleral buckles

Radial

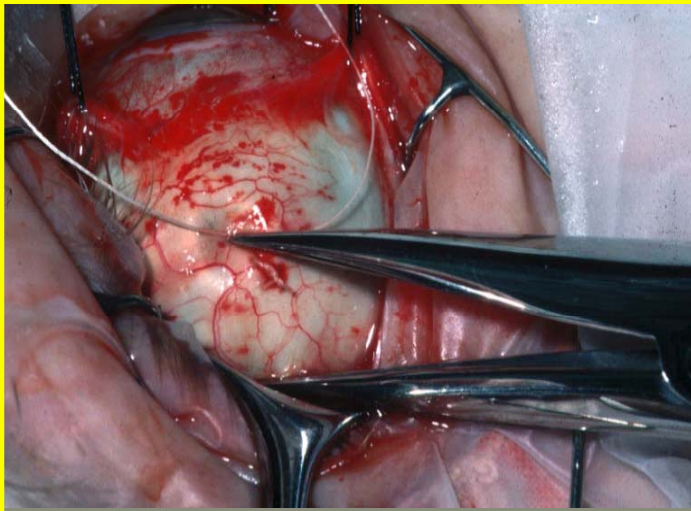


Segmental
circumferential

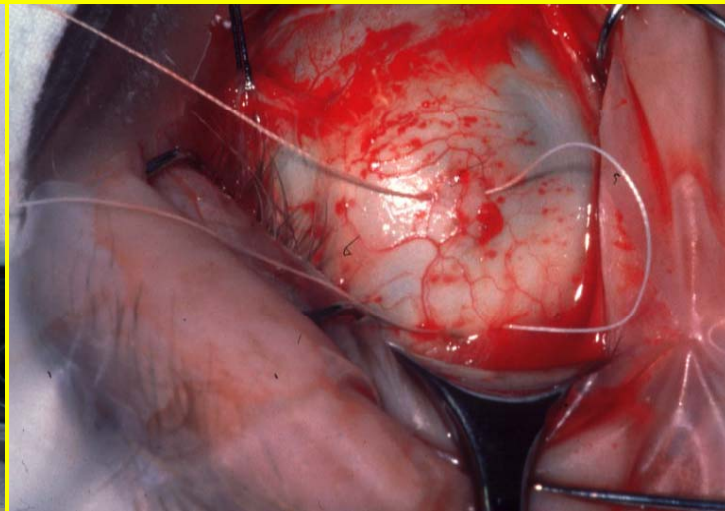
Encircling
augmented by solid
silicone tyre

Encircling
augmented by radial
sponge

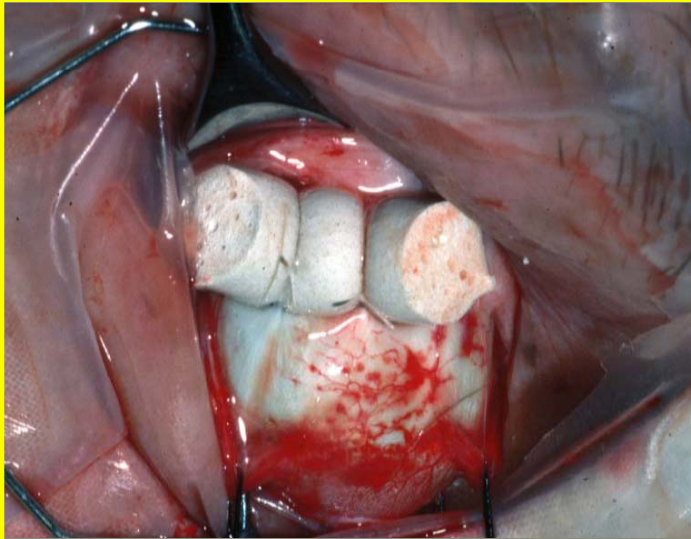
Insertion of local explant



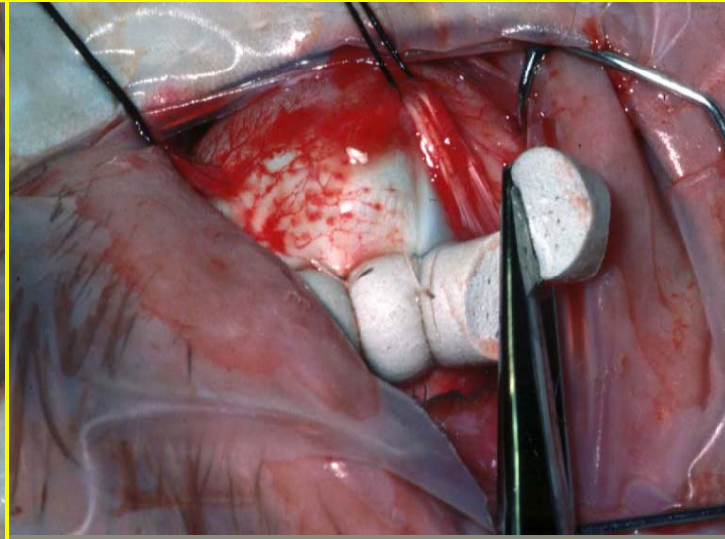
Distance separating sutures measured and marked



Insertion of mattress-type suture

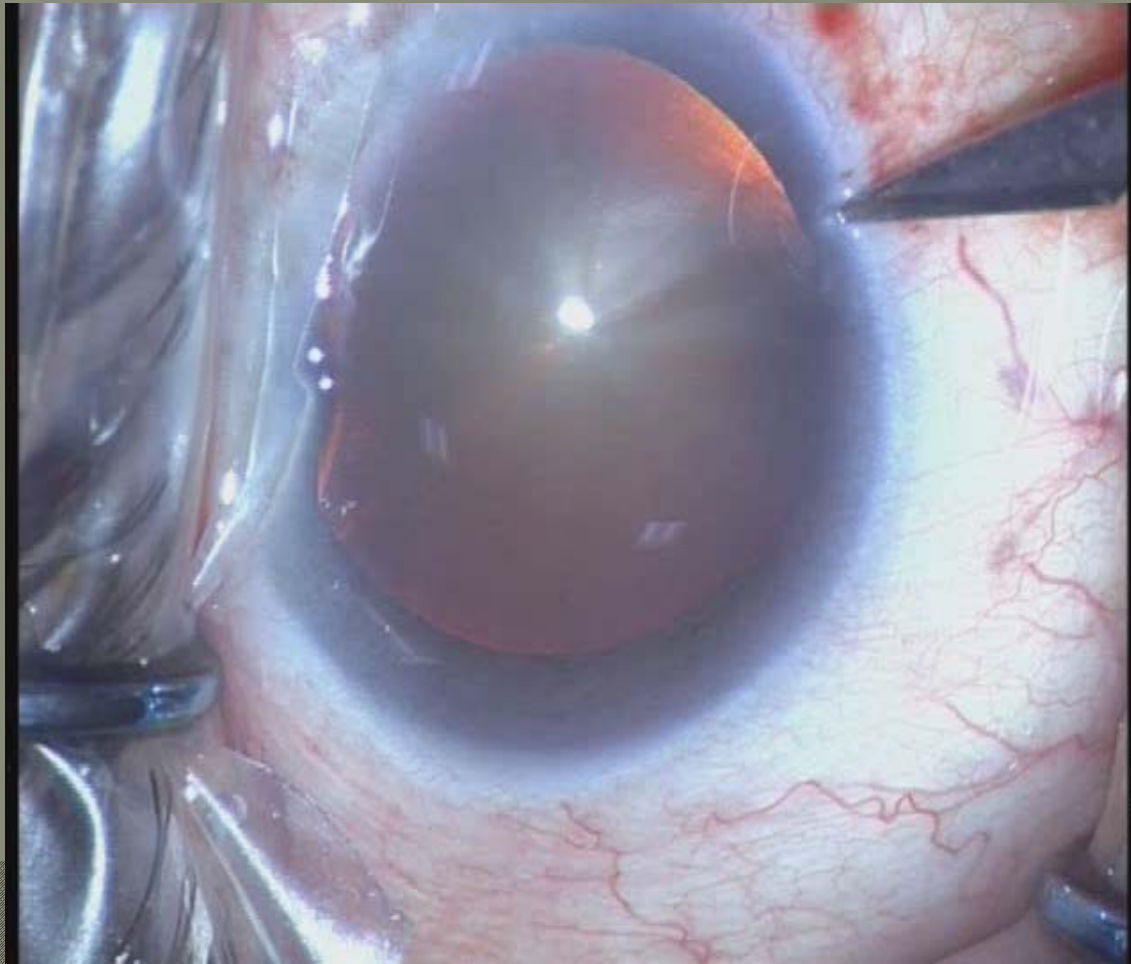


Sutures tightened over explant

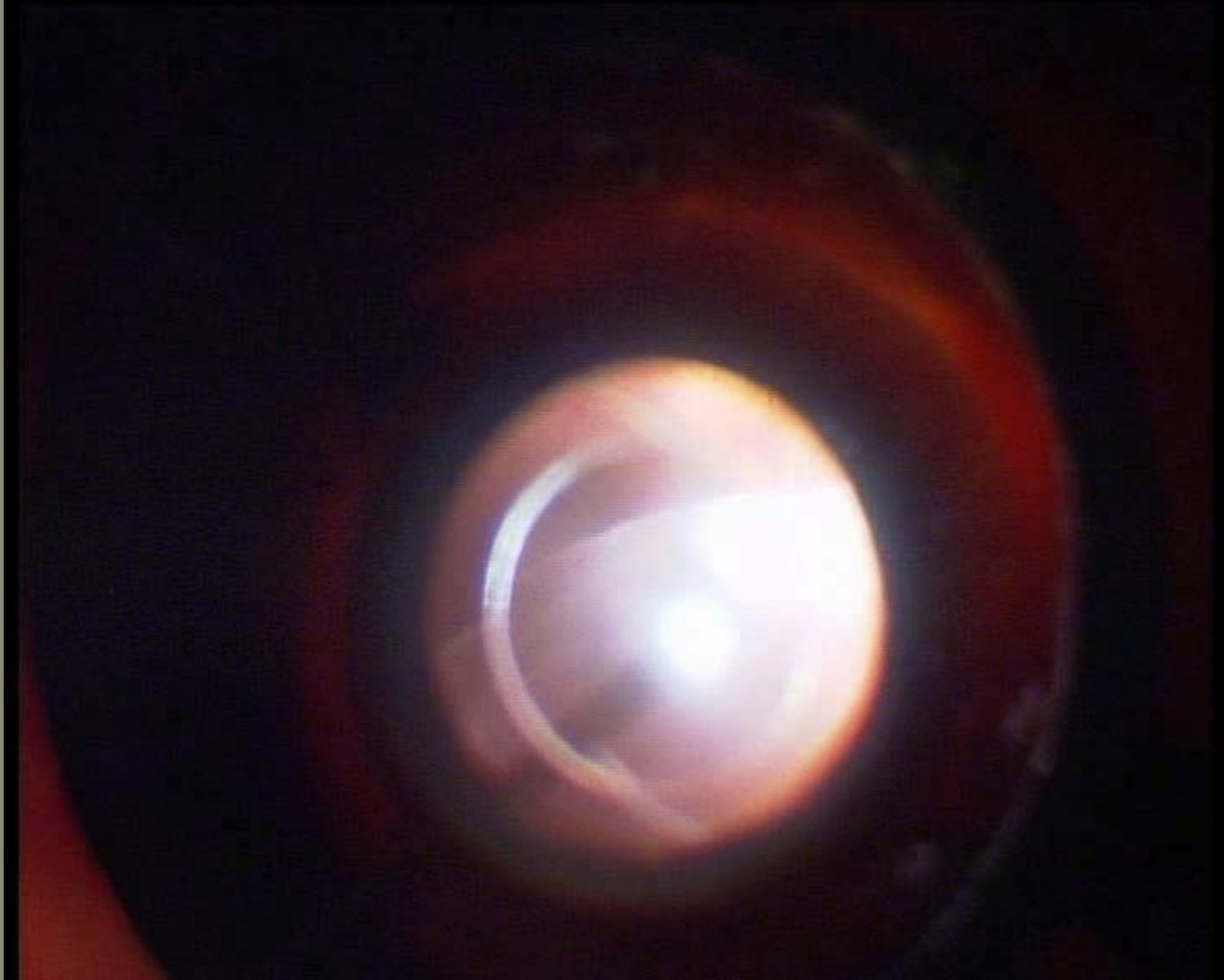


Ends trimmed

Vitrectomy often preceded by cataract surgery
- Microincision techniques (1.8 mm incision)



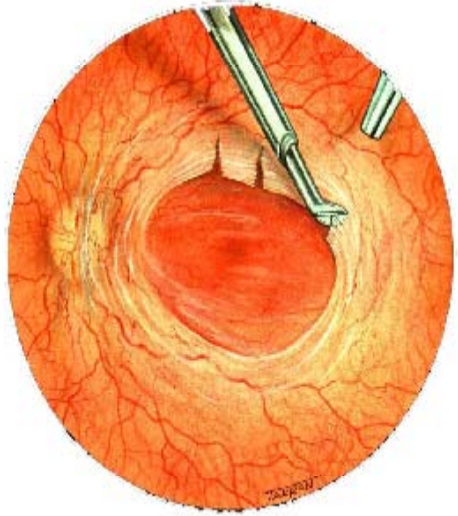
Vitrectomy – Retinal Detachment



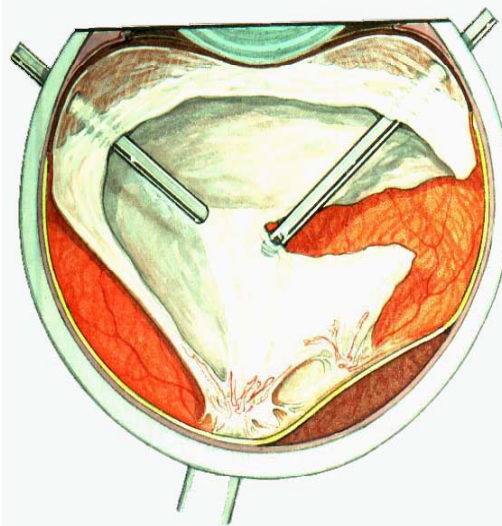


Typical" thought Angela,
"As soon as I get my
teeth fixed, something
else goes wrong!"

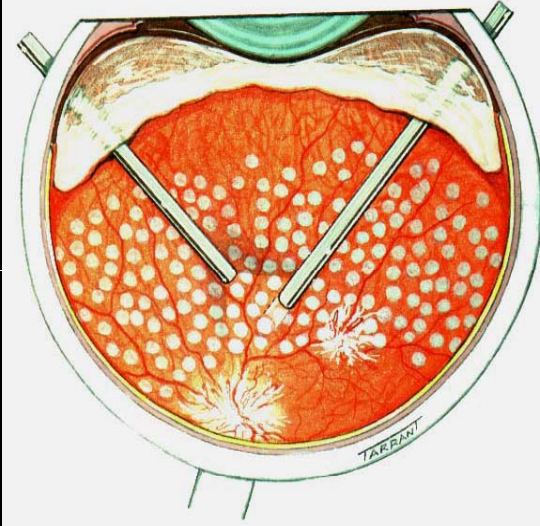
Vitrectomy for diabetic tractional RD



Release of circumferential traction



Release of antero-posterior traction



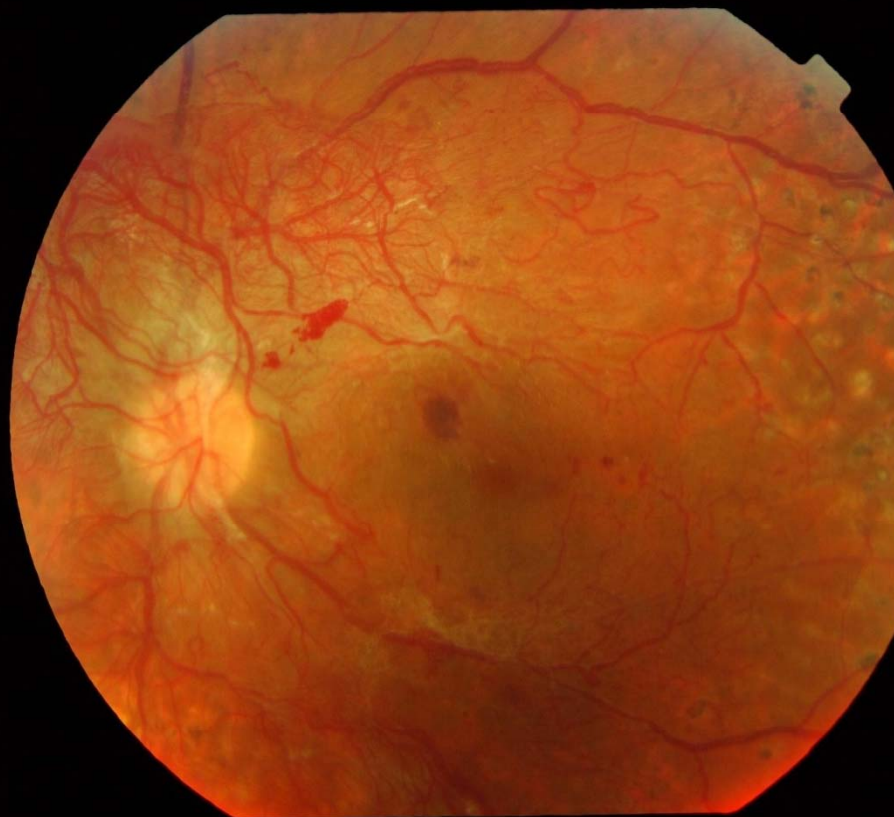
Endophotocoagulation

Proliferative Diabetic Retinopathy



Proliferative Diabetic Retinopathy

Pre-op



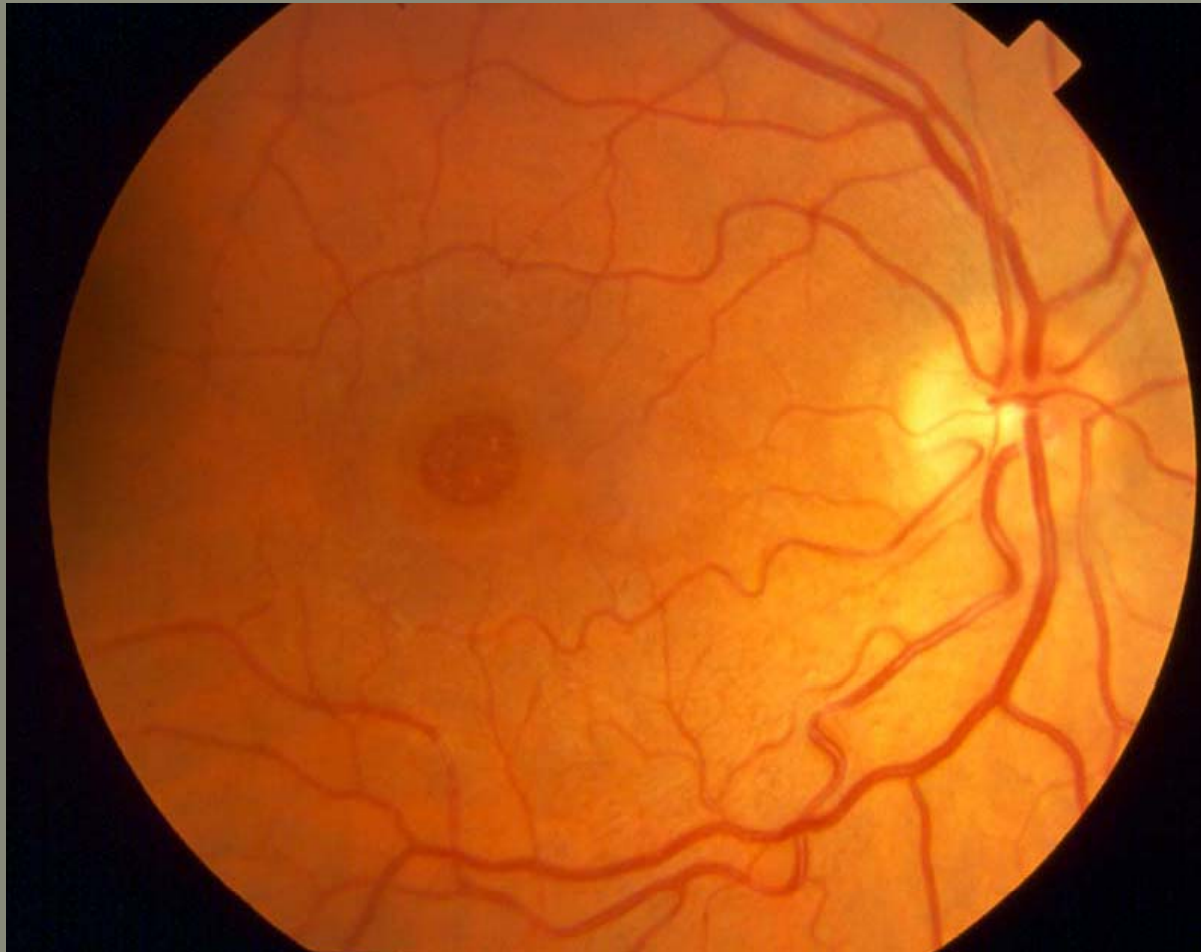
Very severe NV,
Macular traction,
VA – 6/60

Post-op



Stable vessels,
Flat macula,
VA – 6/12

Macular Hole Surgery

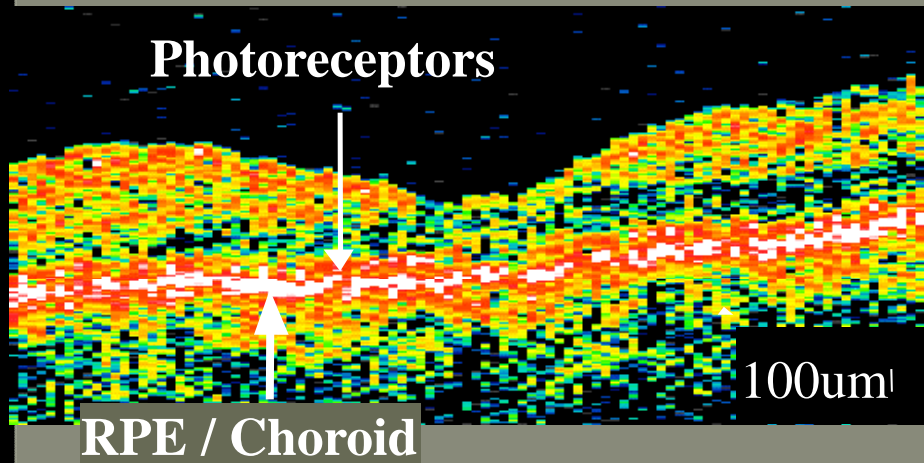


Idiopathic Senile Macular Holes

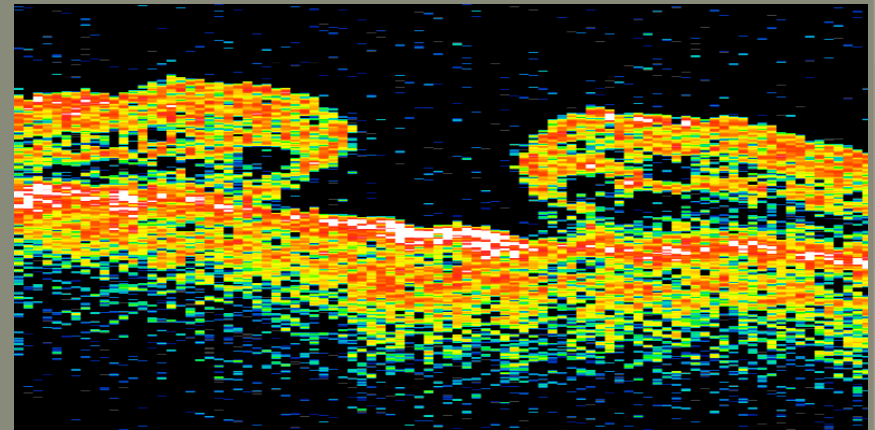
- V.A. of 6/60
- Previously considered untreatable
- Predominantly healthy women, 60 yrs +
- Approx. 10% bilateral
- No other systemic risk factors identified

Optical Coherence Tomography and Macular Holes

OCT of normal macula

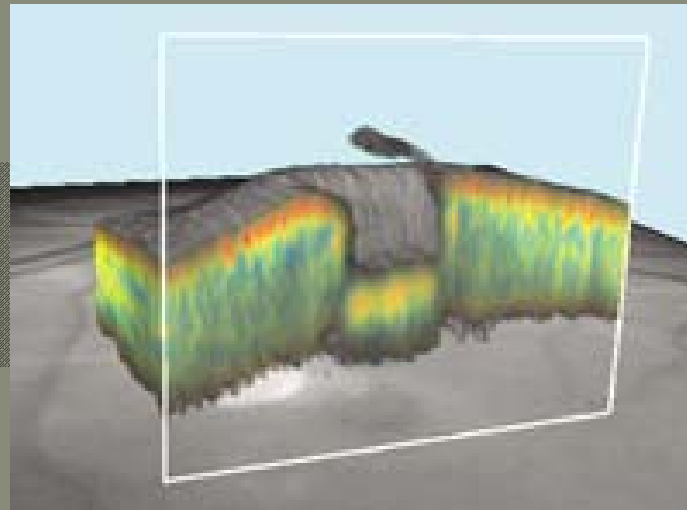
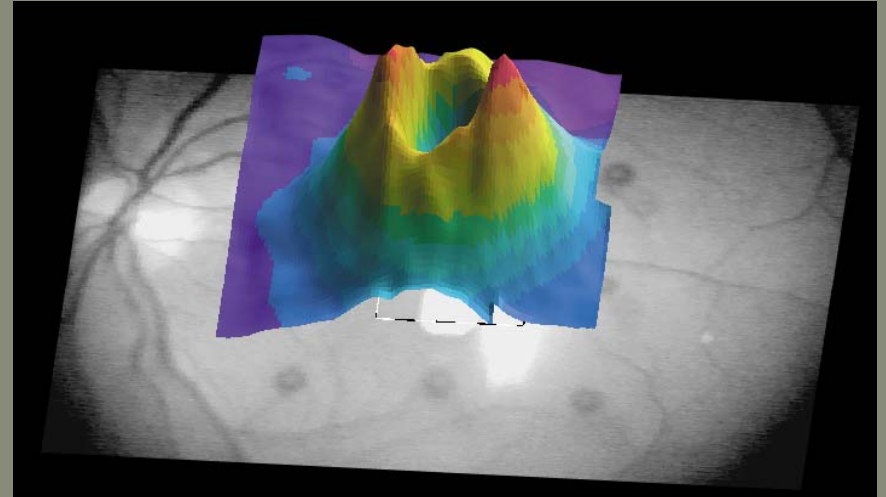
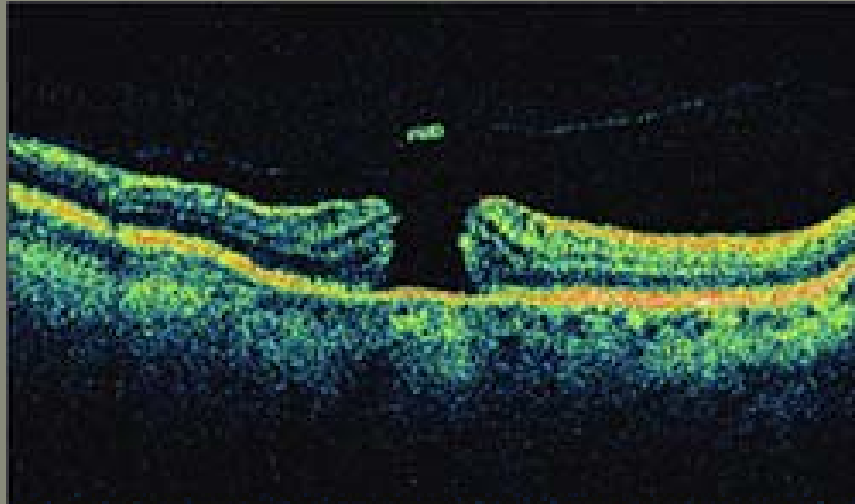


OCT of macular hole

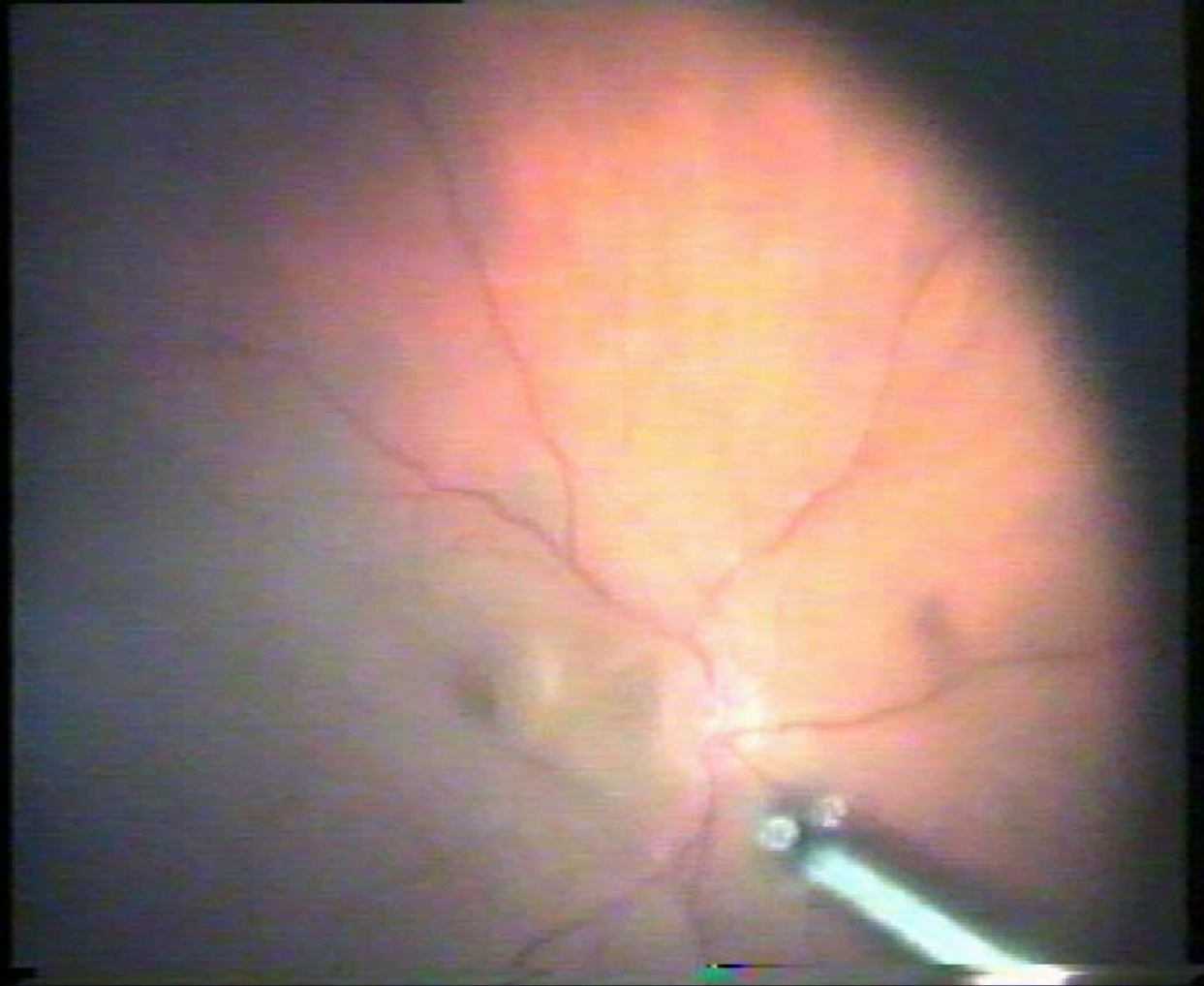


Watzke-Allen slit beam testing of macular holes confirmed by OCT
Tanner et al. *Archives of Ophthalmology*. 2000;118(8): 1059-1063.

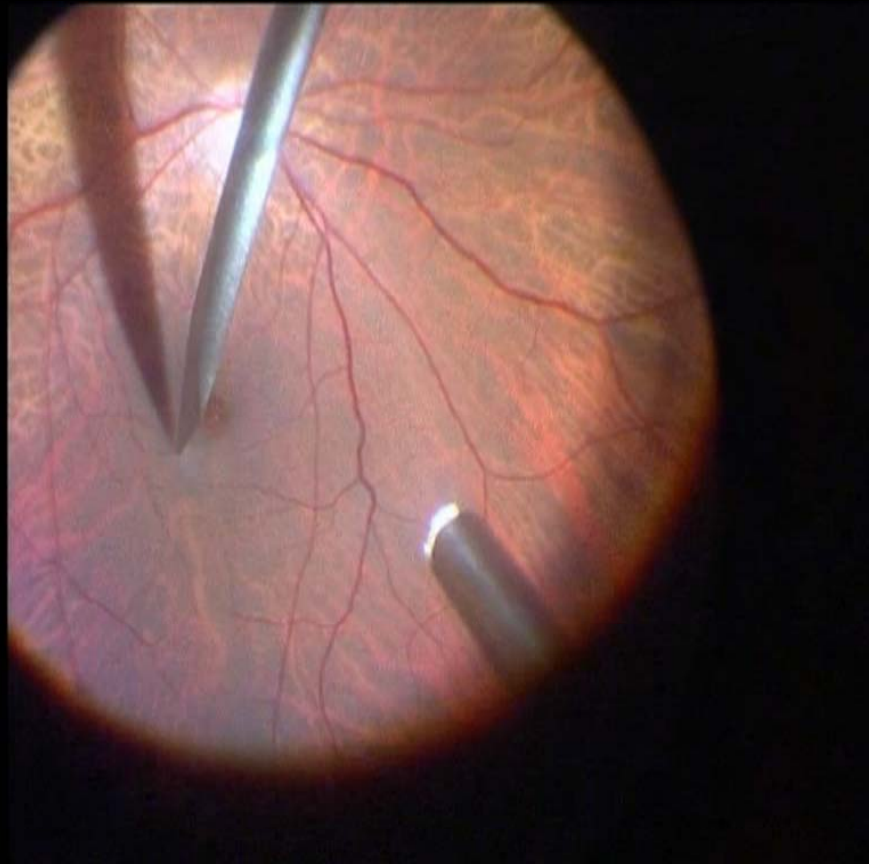
Optical Coherence Tomography and Macular Holes



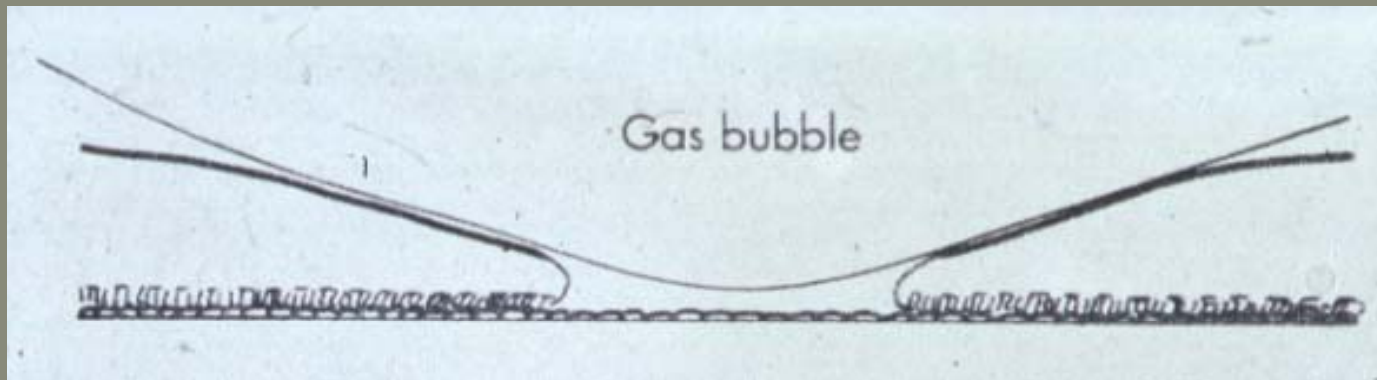
Macular Hole Surgery



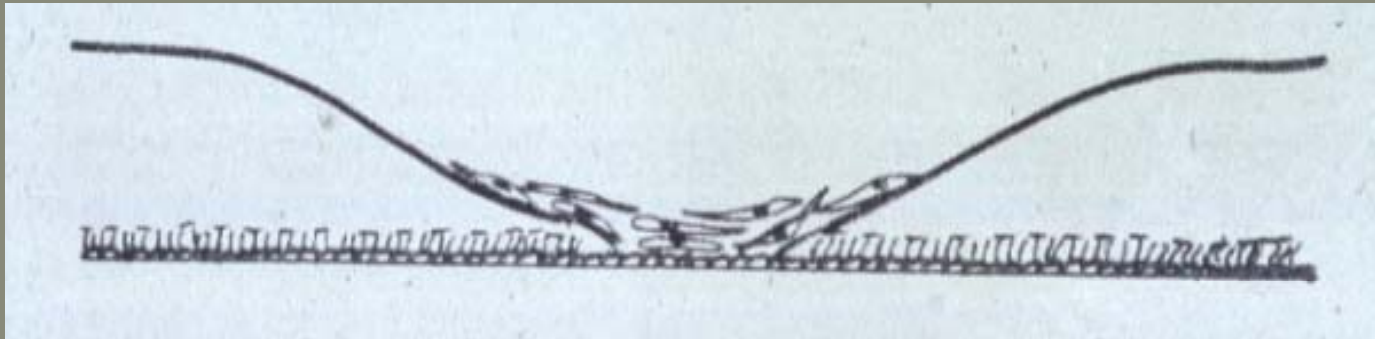
Macular Hole Surgery



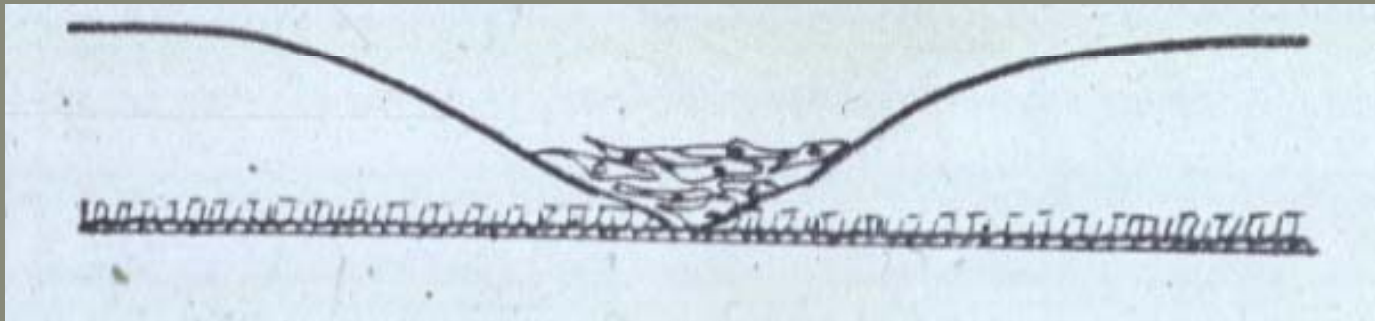
1.



2.

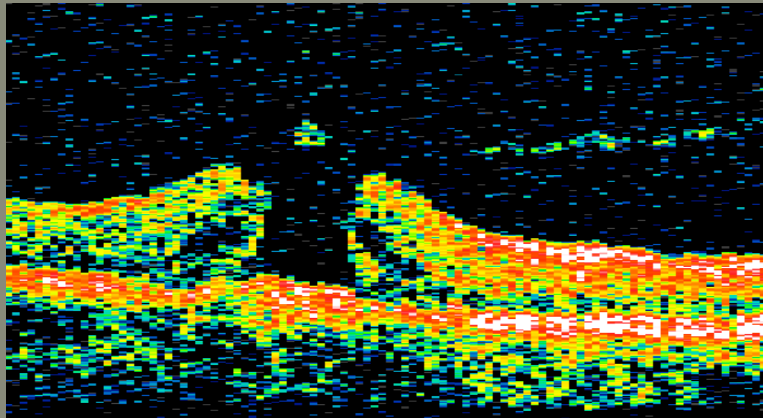


3.

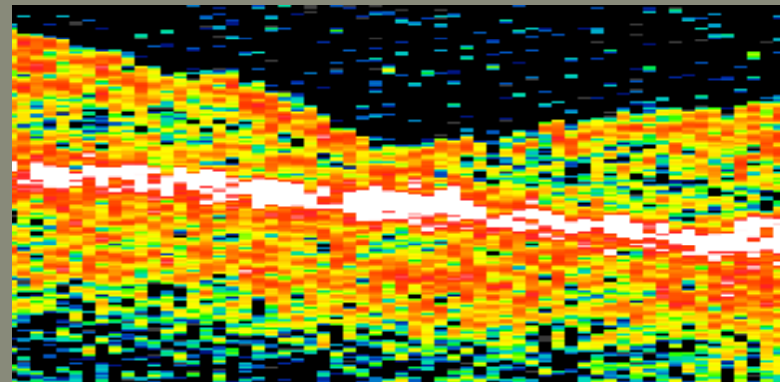


OCT and Macular Holes

Pre-op



Post-op



Optical coherence tomography of the vitreo-retinal interface in macular hole formation

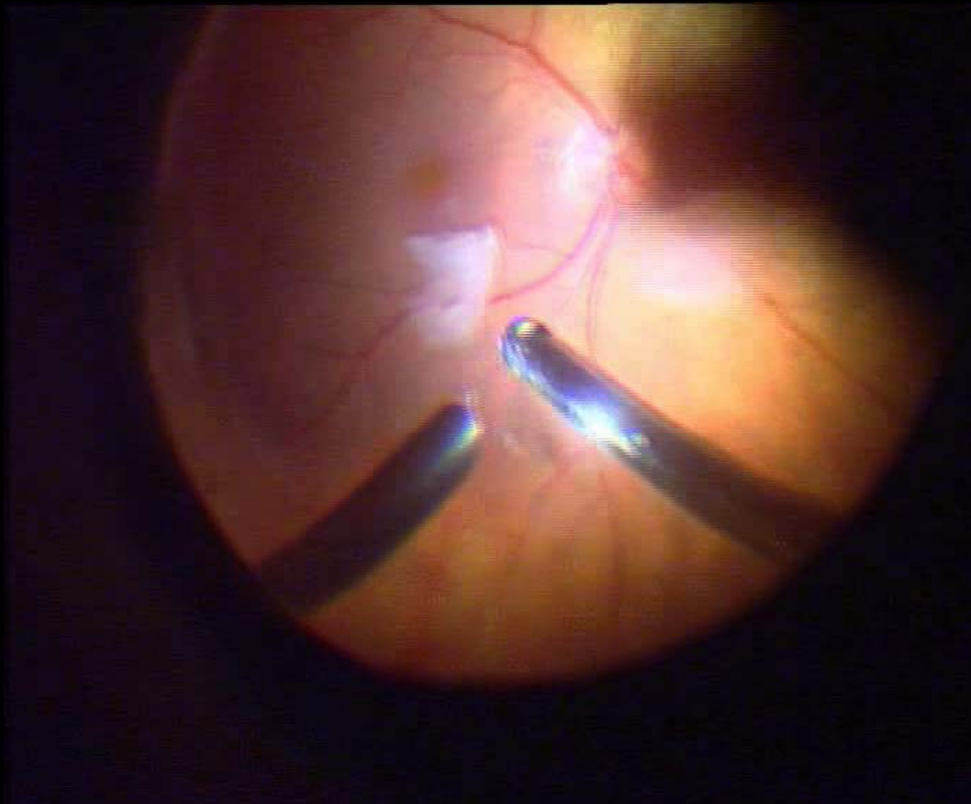
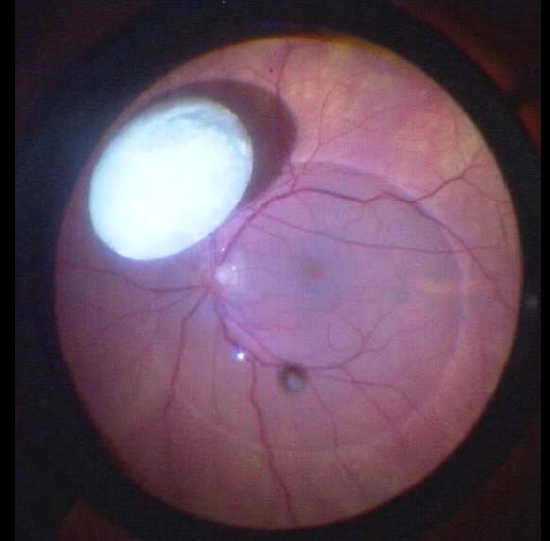
Tanner et al. *British Journal of Ophthalmology*. 2001

Macular hole surgery

- **Approx. 96% closure**
- **Approx. 80% 2 line improvement V.A.**
- **Cataract**
- **Gas fill and posturing**

Cataract Surgery complications

- ① **Dropped lens**
- ① **Dislocated Intraocular lens**
- ① **Endophthalmitis –infection**

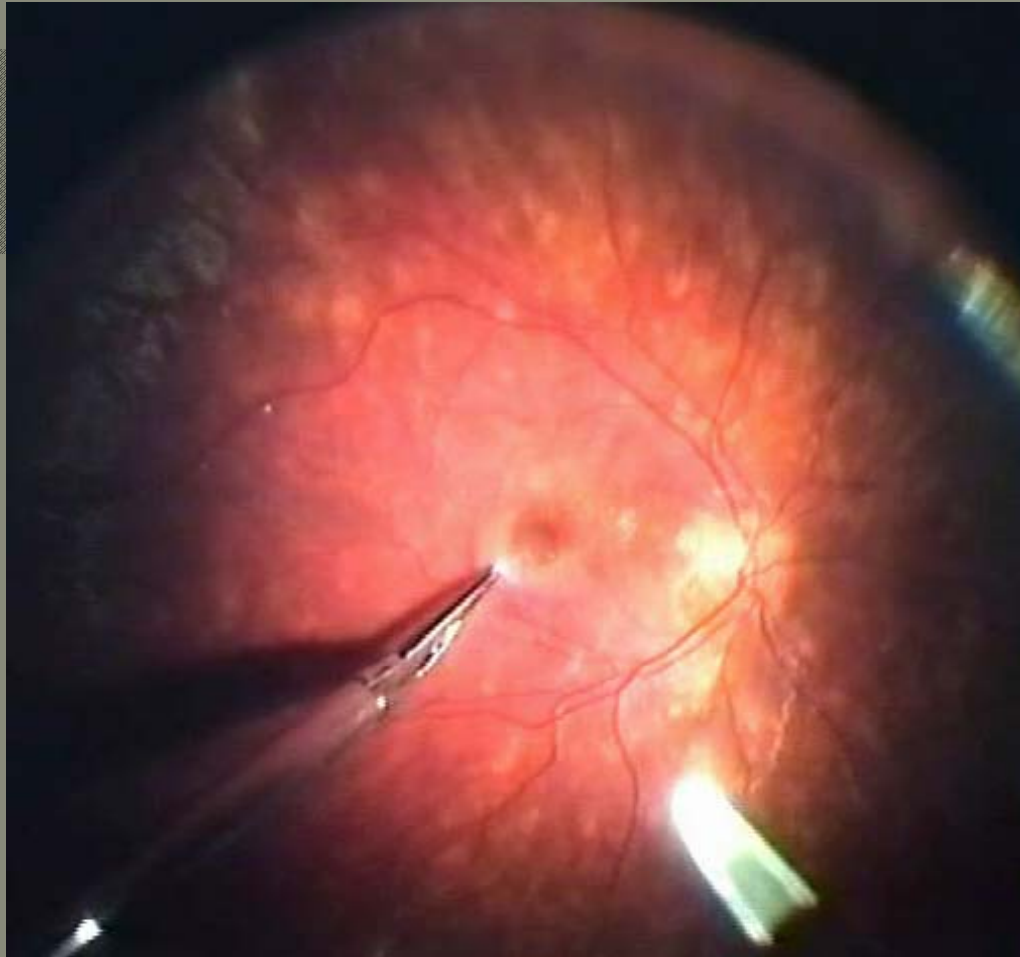


Age Related Macular Degeneration

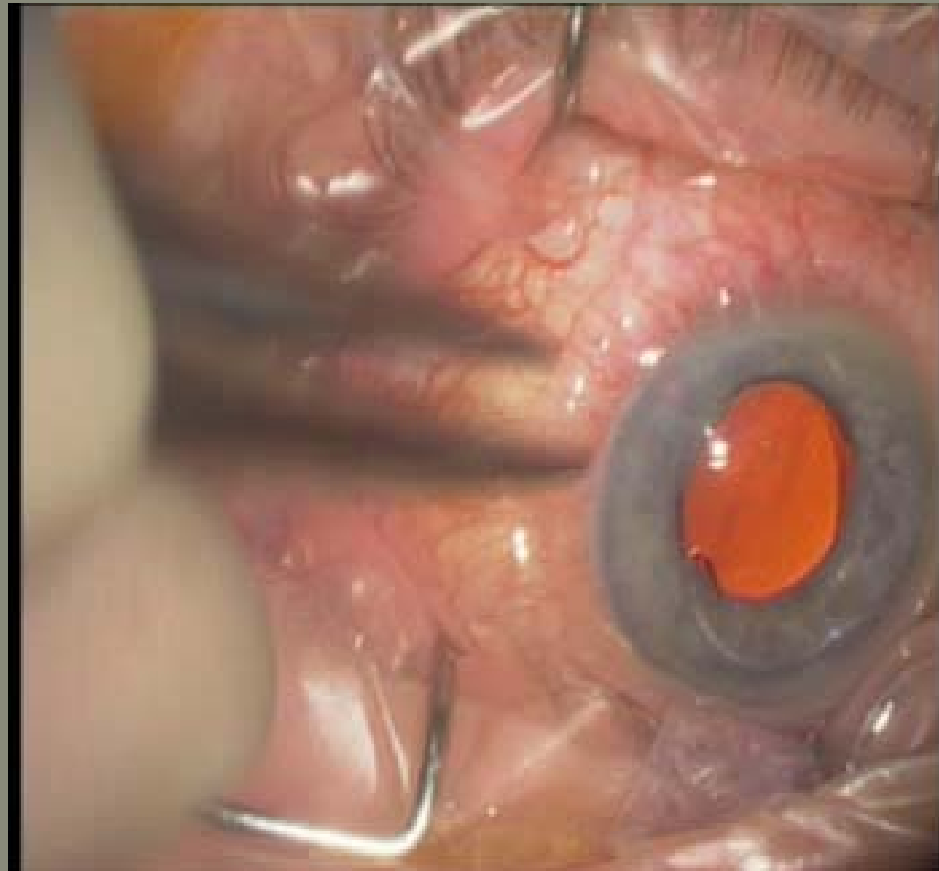


AMD is the major cause of blindness in western world

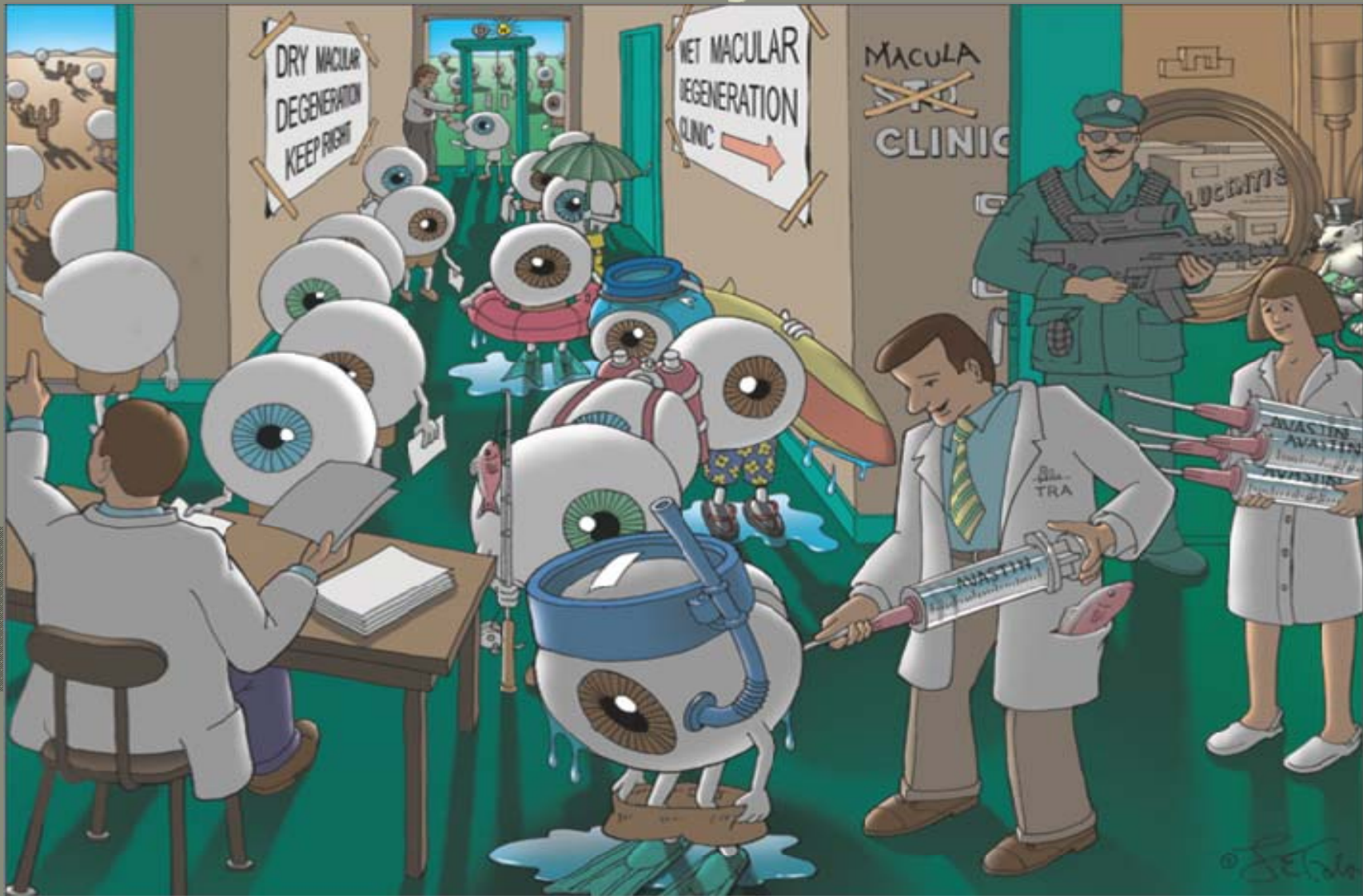
Vitrectomy and excision SRNVIM



Intra-vitreal injection : Anti growth factor - Lucentis



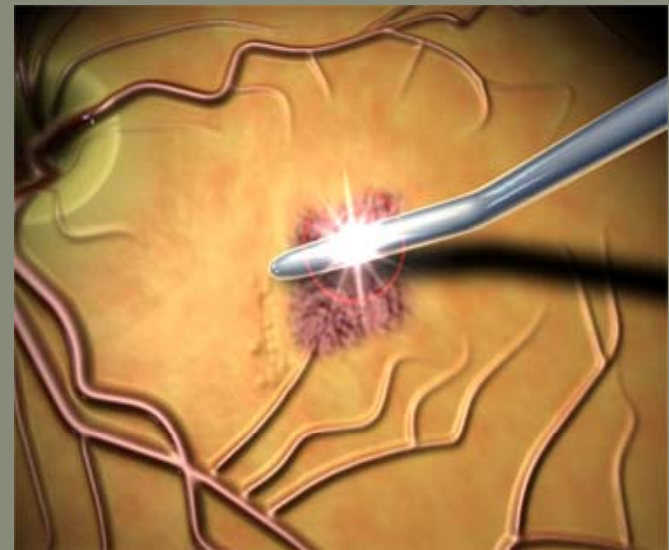
“Lucentis Junkies”



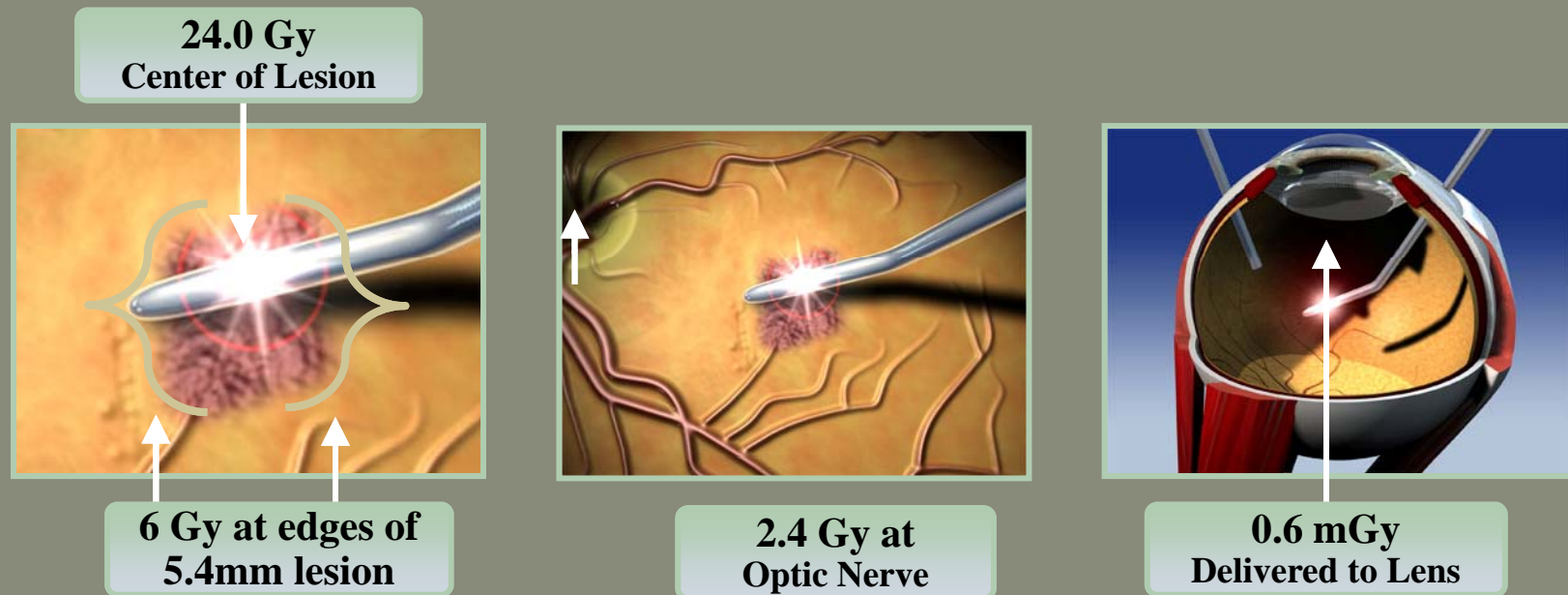
Major problem – Cost, time, risk

Epimacular Brachytherapy for the Treatment of Neovascular AMD

EPIRAD



Radiation Dose to Ocular Structures



Tissue	Effect	Dose for Clinically Observable Damage	Dose Delivered by NeoVista Strontium 90 Device
Lens	Cataract	2 Gy	.00056 Gy
Retina	Radiation Retinopathy	35-55 Gy	24 Gy
Optic Nerve	Optic Neuropathy	>55 Gy	2.4 Gy

Reference: Finger PT, Berson A, Ng T, Szechter A. Ophthalmic plaque radiotherapy for age-related macular degeneration associated with subretinal neovascularization. *Am J Ophthalmol*. 1999 Feb;127(2):170-7. Adapted from Bardenstein, Char and Rosenblatt

Epirad

- Dramatically reduce number Lucentis injections
- Approval as trial centre
- Await funding for trial
- Further data – commission as treatment



Telescope that can save sight

A UK SURGEON has restored a blind patient's sight using pioneering surgery to implant a miniaturised telescope in her eye.

The patient, Beryl Haskew from Cheshire, suffers from age-related macular degeneration - AMD - which affects almost three million people in the UK and is the most common cause of sight loss in the

by ANGELA BROOKS

surgery last month - the first of its kind in the UK - Mrs Haskew, who was previously registered blind, can read again and her eyesight is almost good enough for driving.

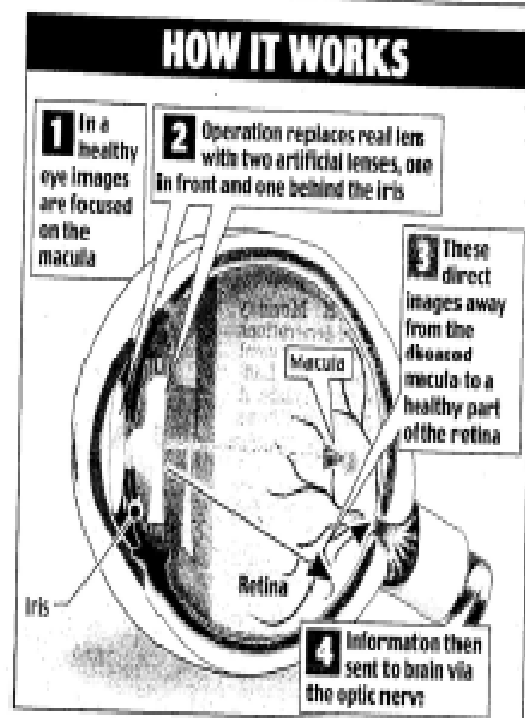
Macular degeneration destroys cells in the macula, the small central part of the light-sensitive retina at the back of the eye.

The macula is responsible for distinguishing fine detail necessary

patient's eyes before surgery on a simulator - a device that allows the surgeon to try out different lenses attached to the patient's glasses to pinpoint the optimum angle for improving eyesight.

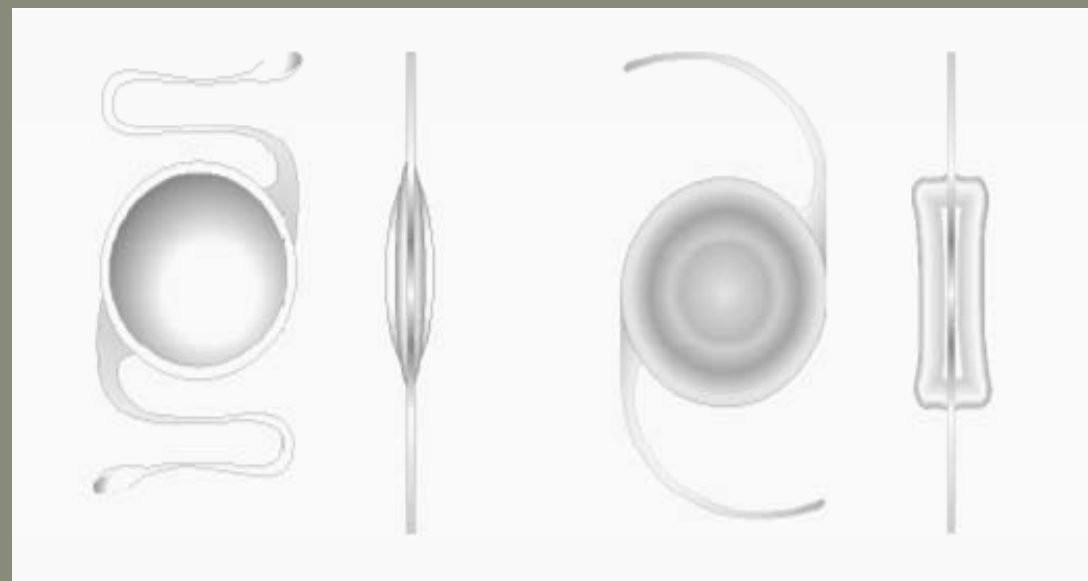
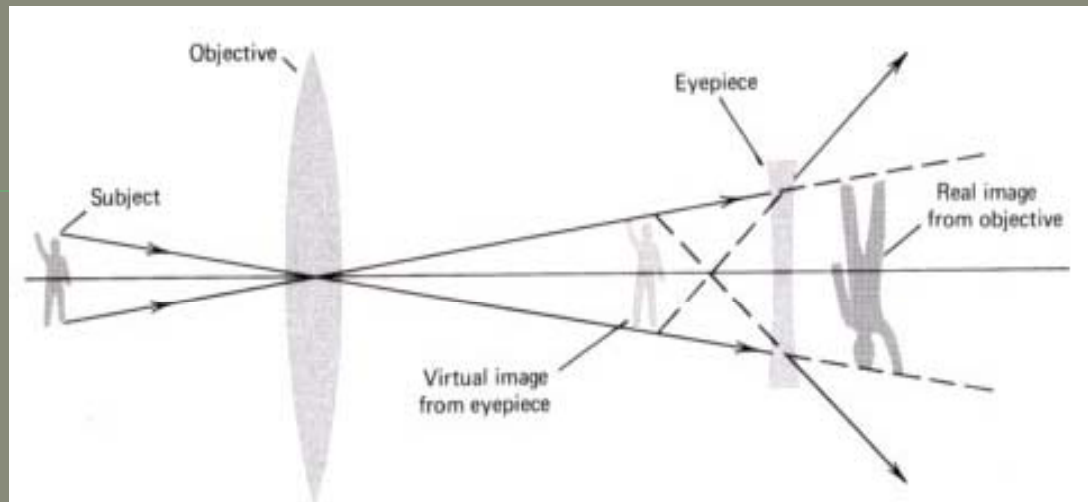
During surgery, a 3mm incision is made in the cornea - the transparent surface of the eye covering the iris and the pupil.

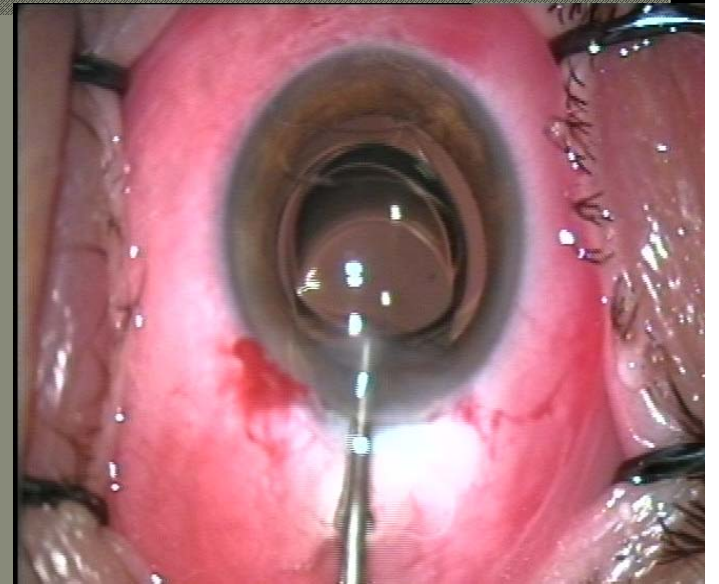
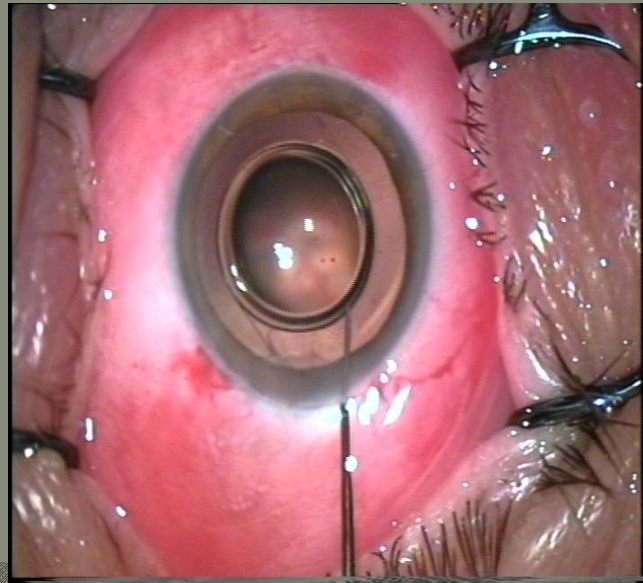
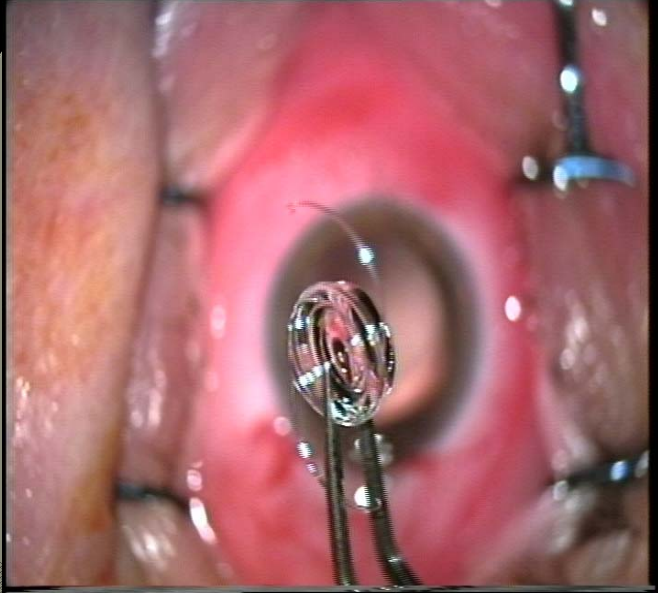
This is where the natural lens behind the iris is removed to be replaced by a flexible miniature



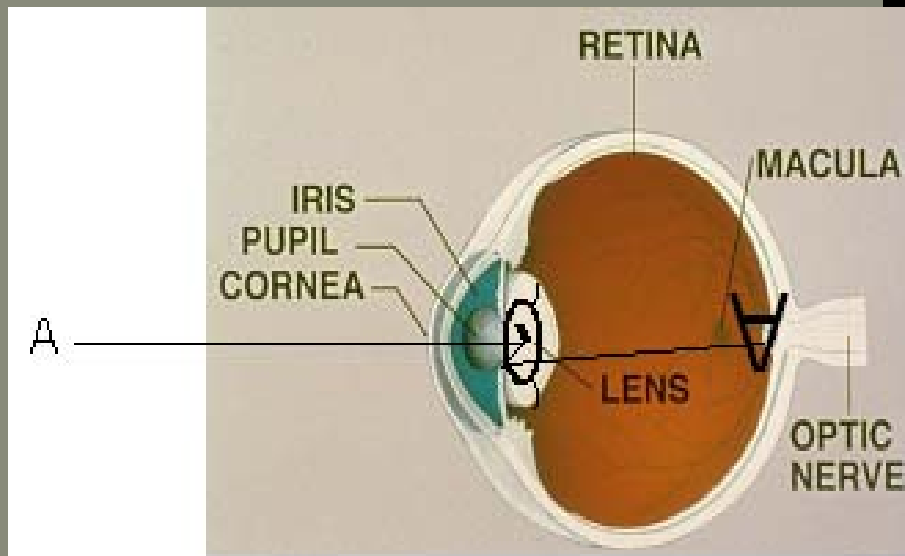
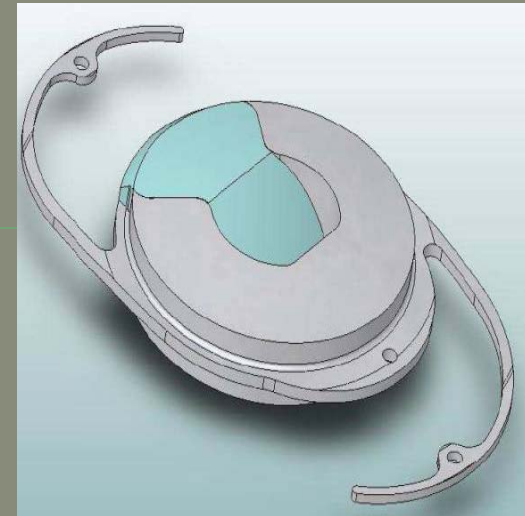
operation Mrs Haskew was able to "I've already made so much progress



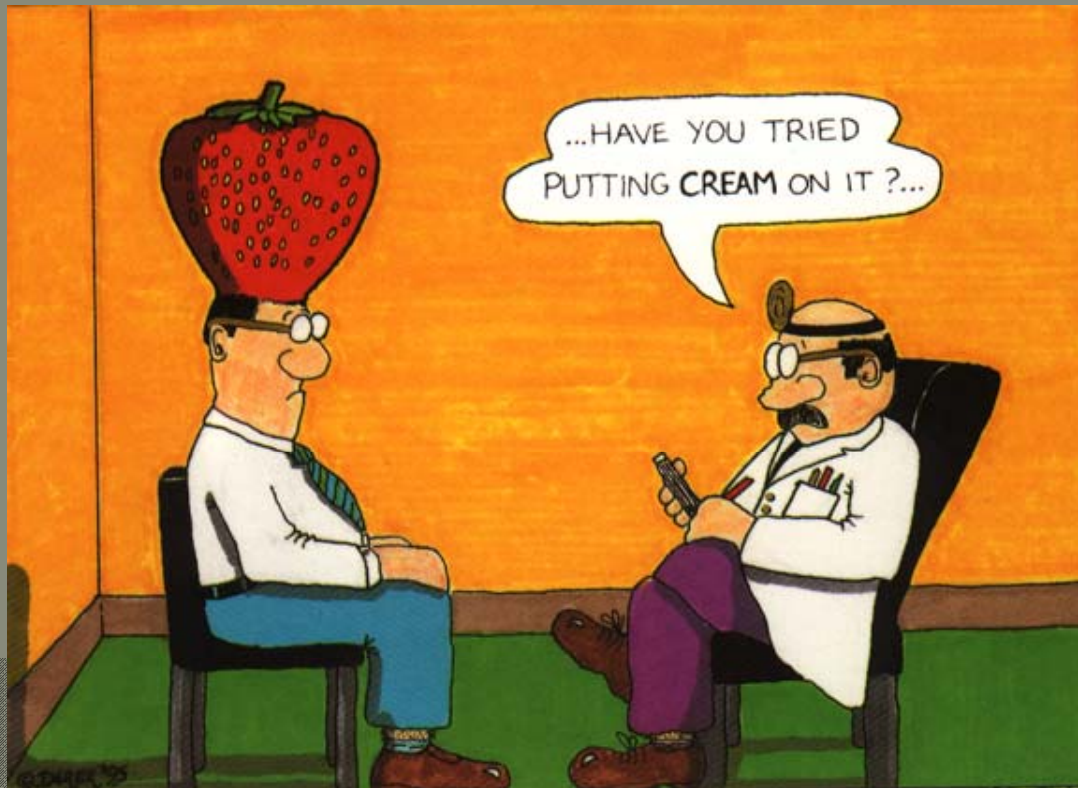




LMI implant

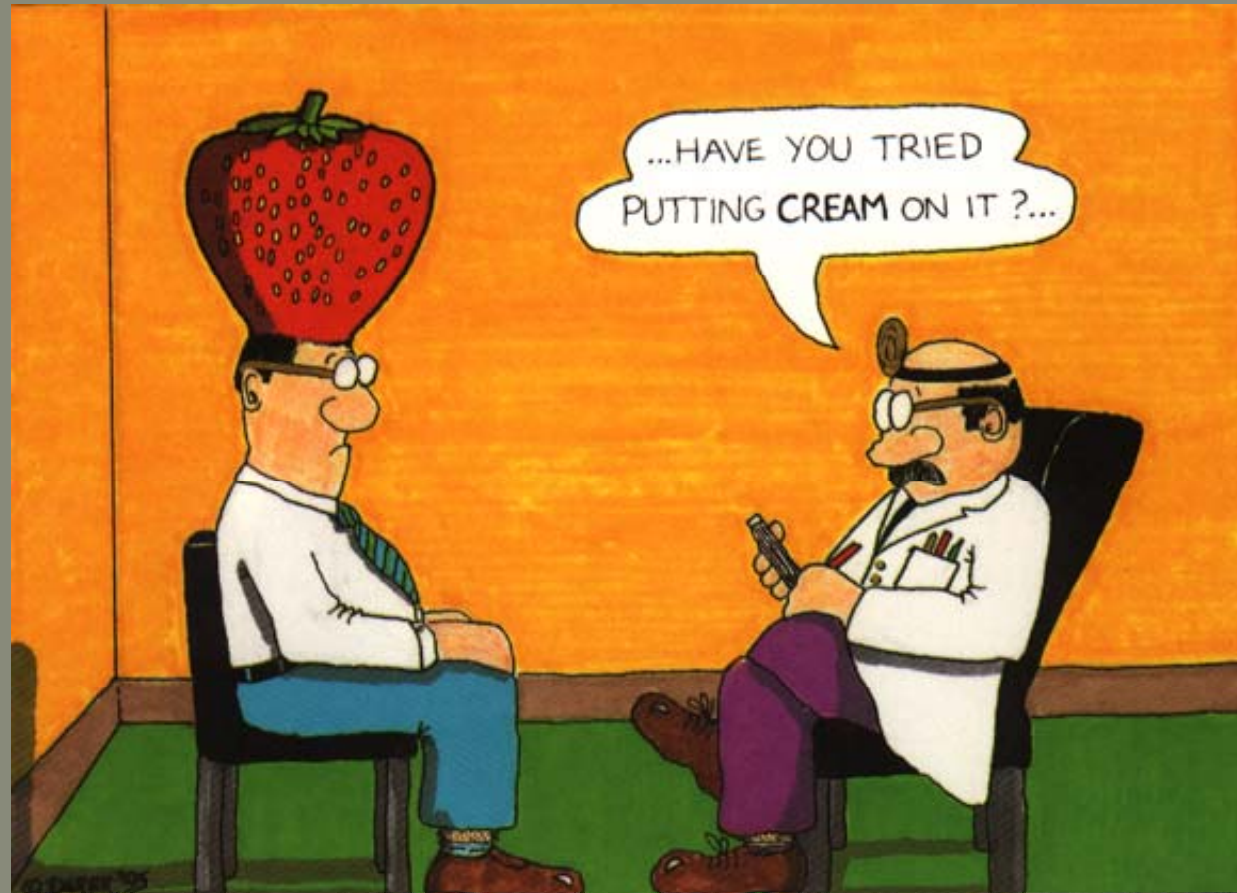


I am happy to take questions to:
secretary@tanner-eyes.co.uk



Further info at
www.tanner-eyes.co.uk

“ Thank you – questions ? ”



www.tanner-eyes.co.uk