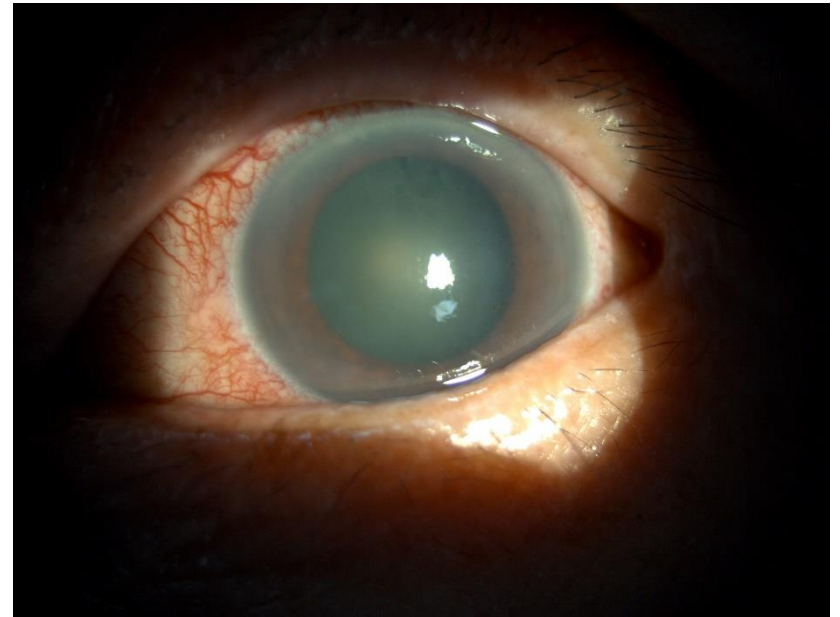
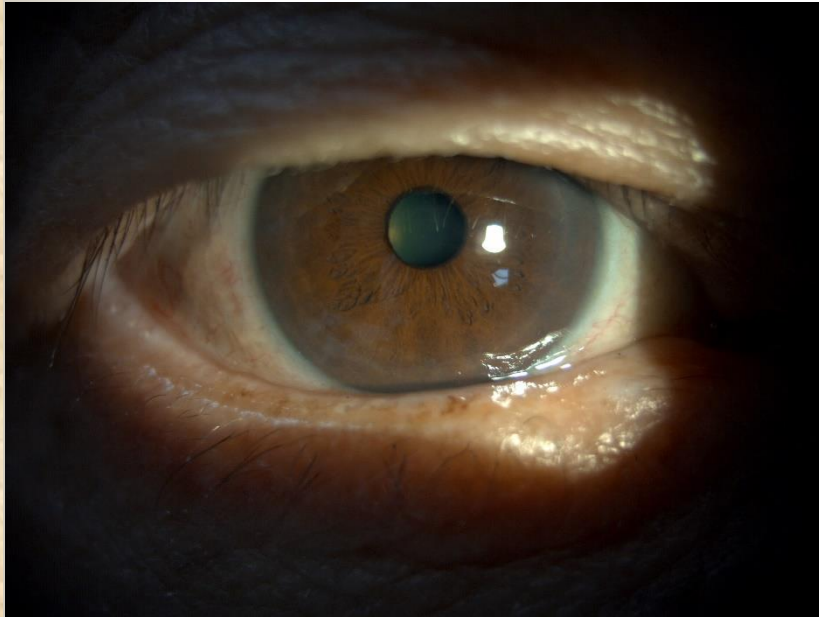


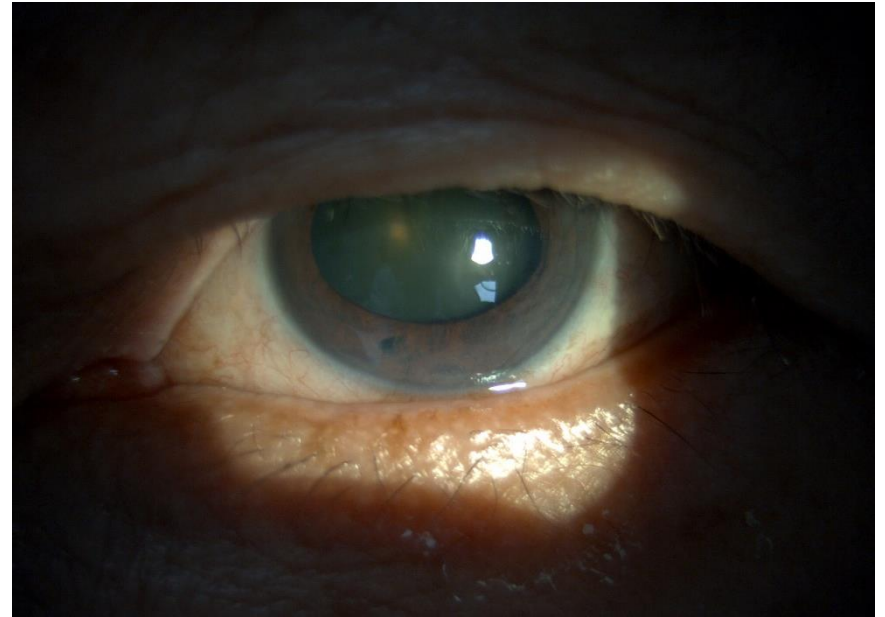
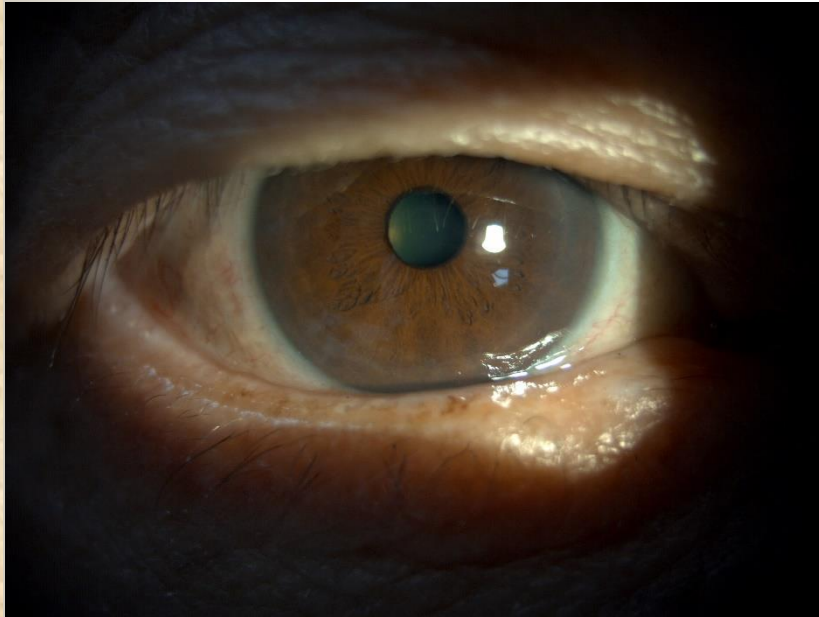


At a glance: Glaucoma

聖馬爾定醫院

眼科 郭淑貞醫師







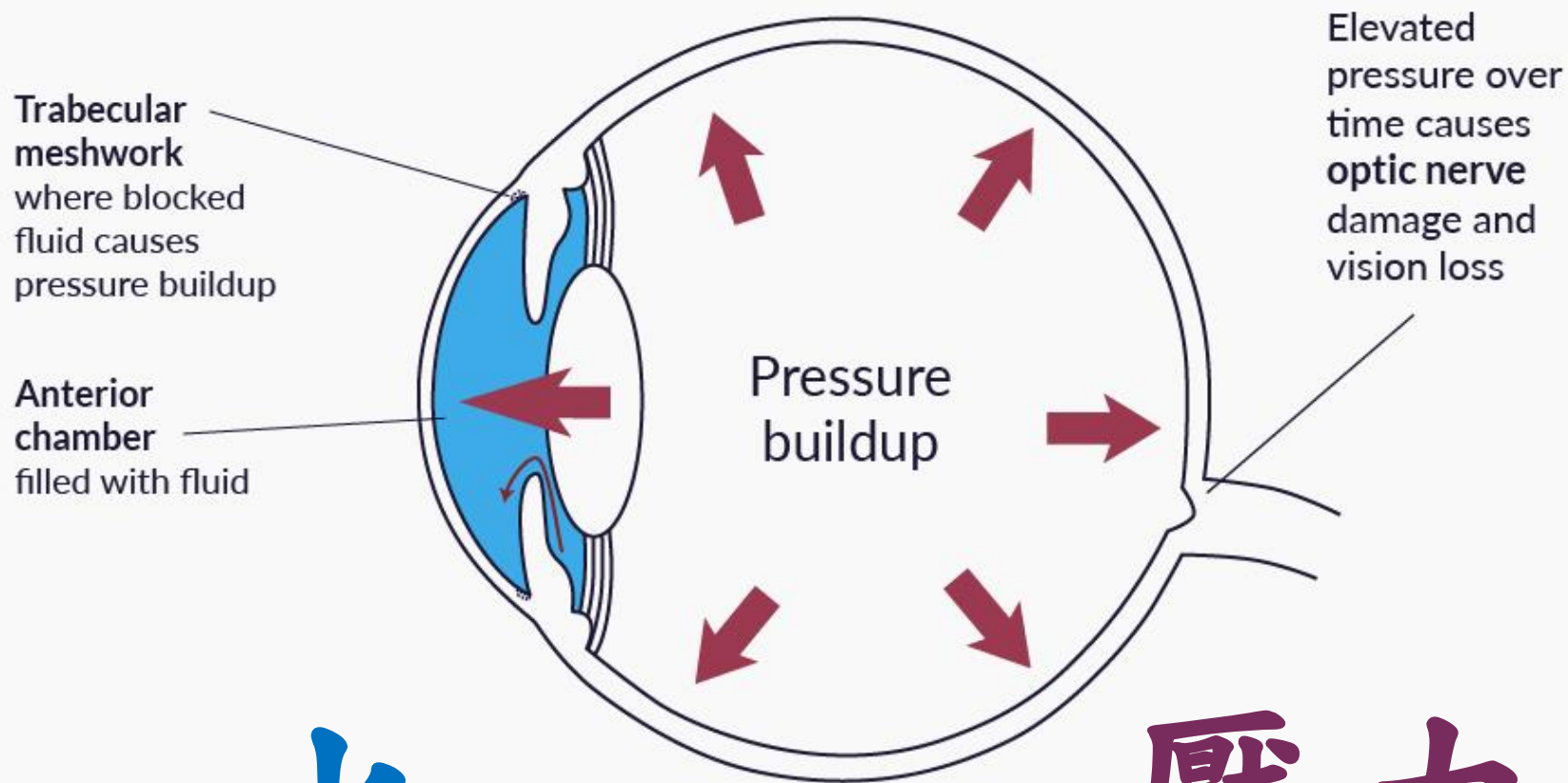
At a glance: 青光眼

a tempest in a teapot

茶壺裡的風暴

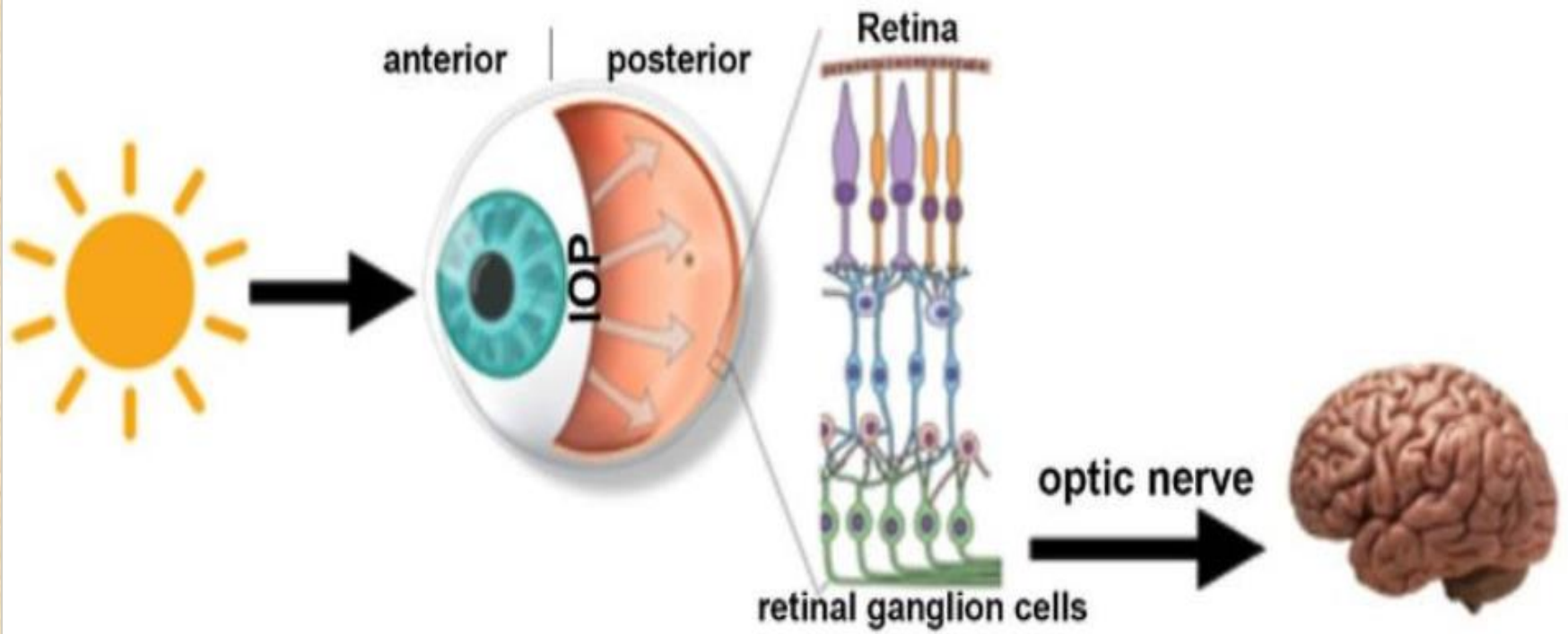
- 青光眼是世界第2大致盲原因
- 不可逆失明的首要致因

青光眼

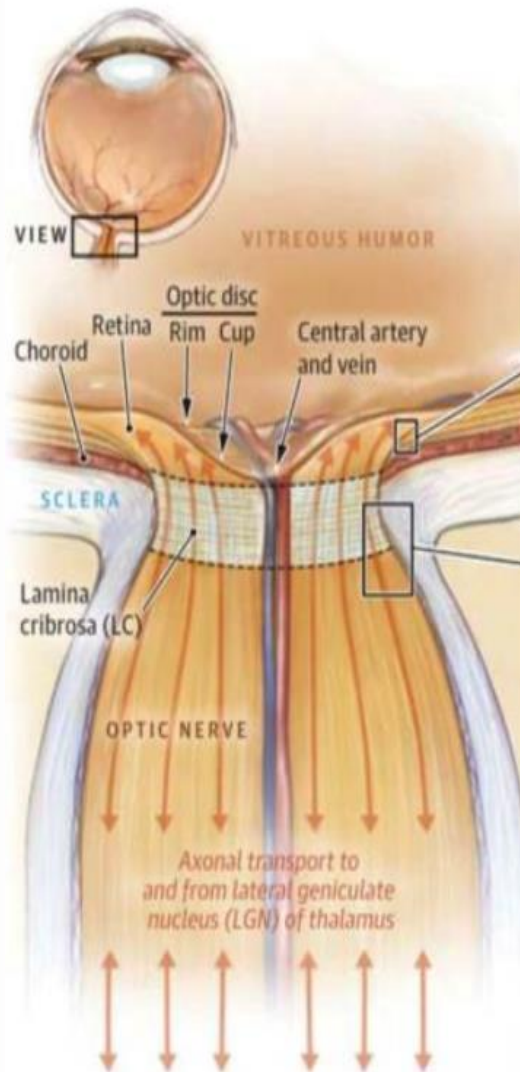


水的流動

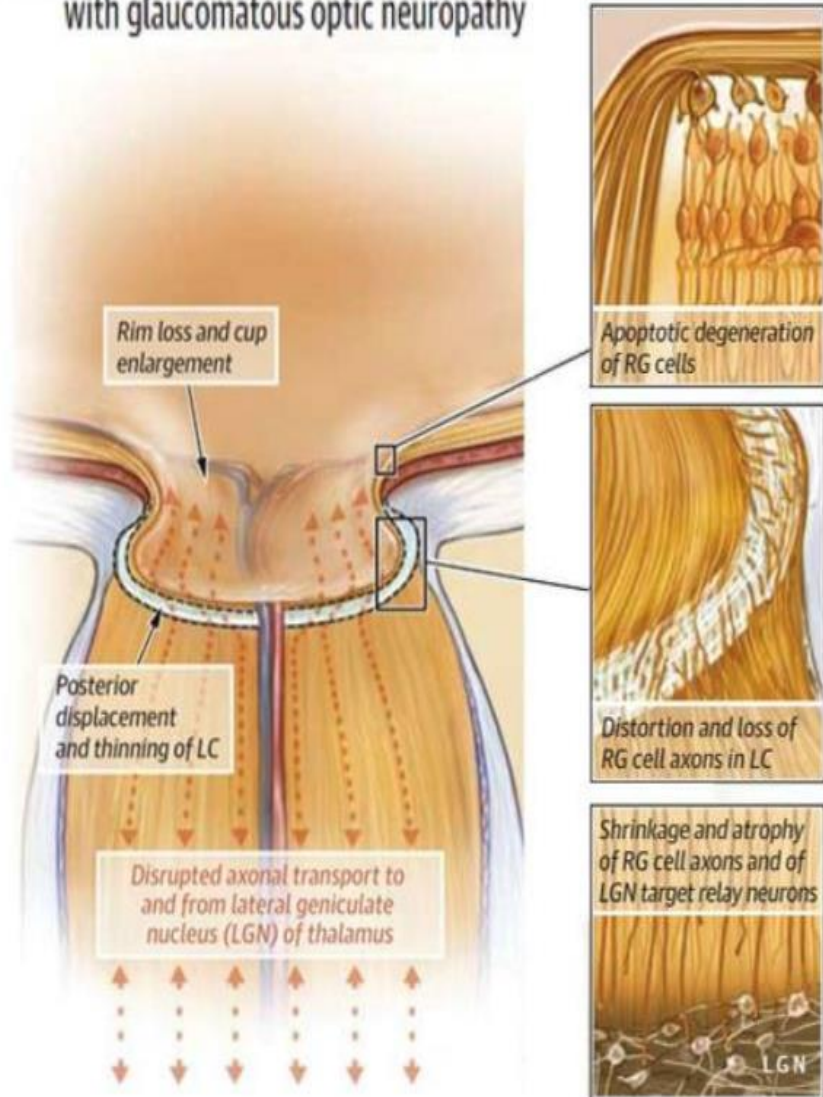
壓力

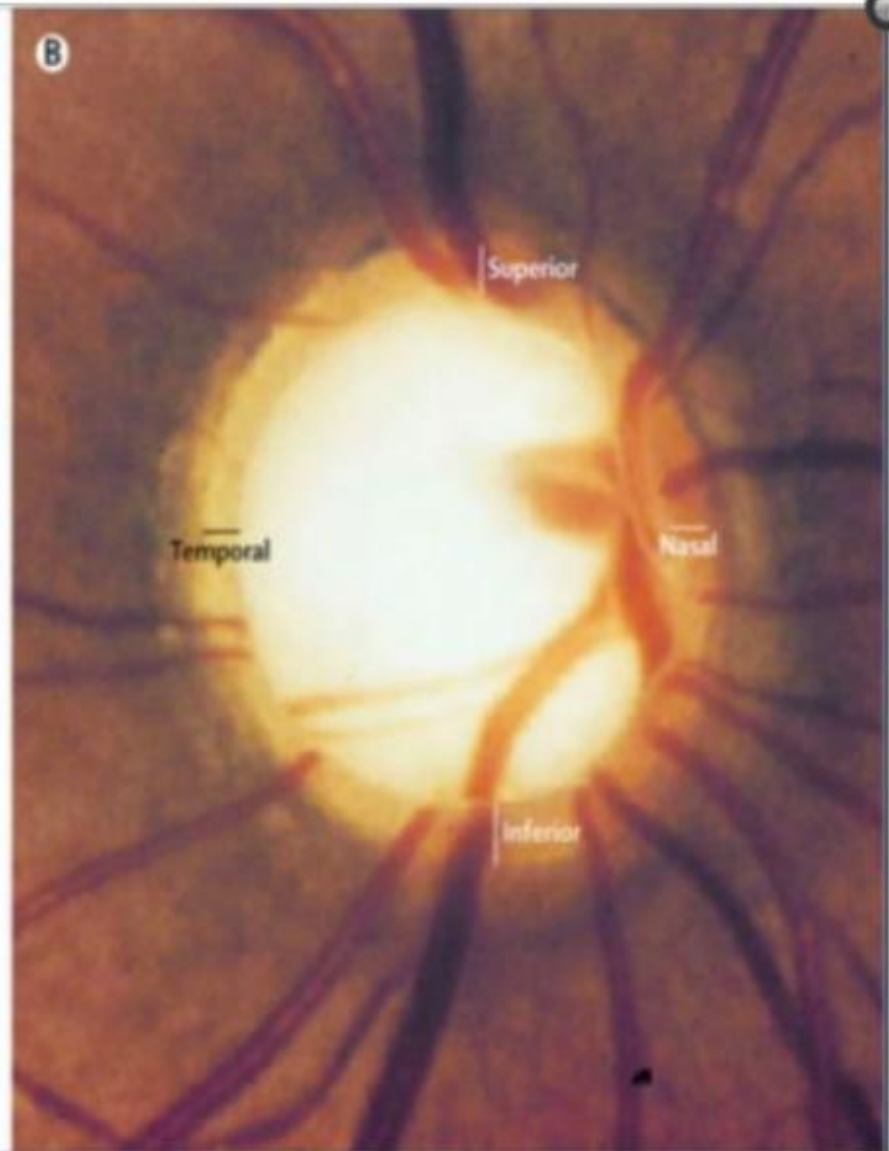
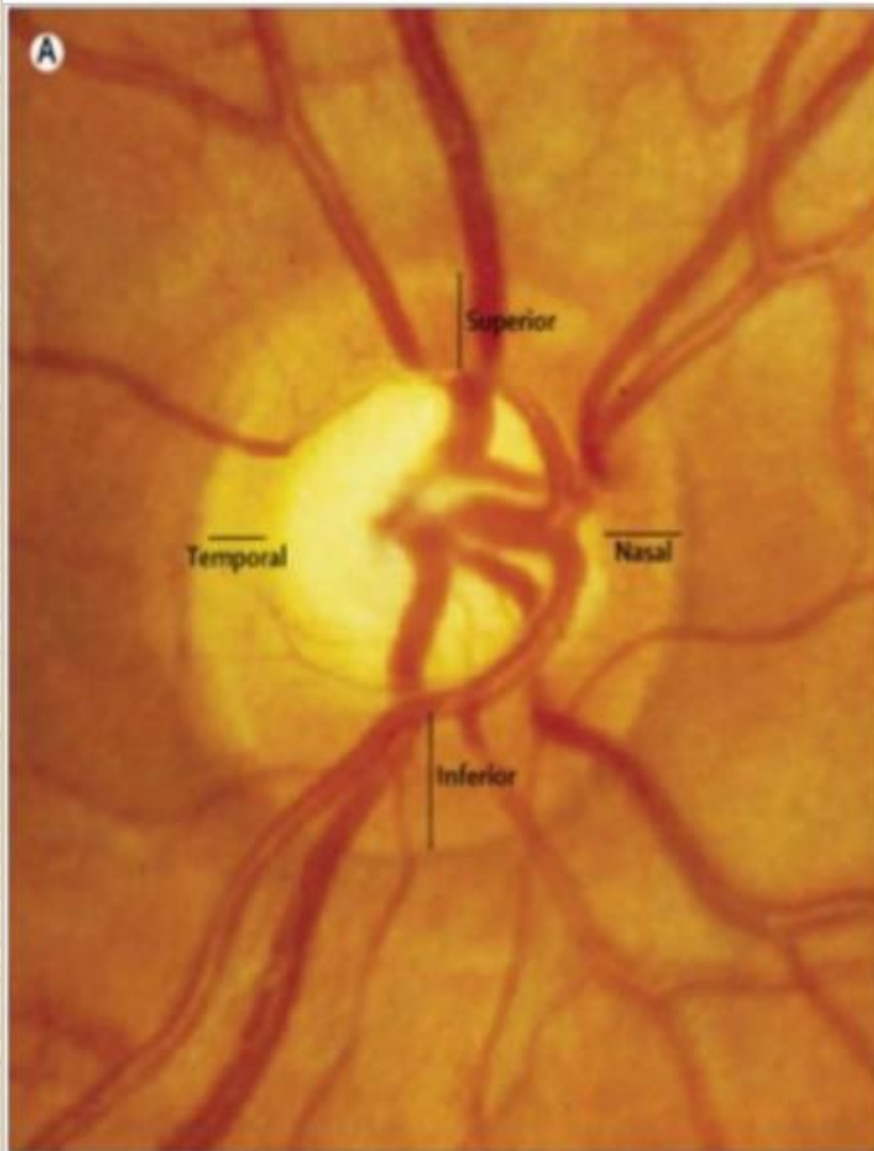


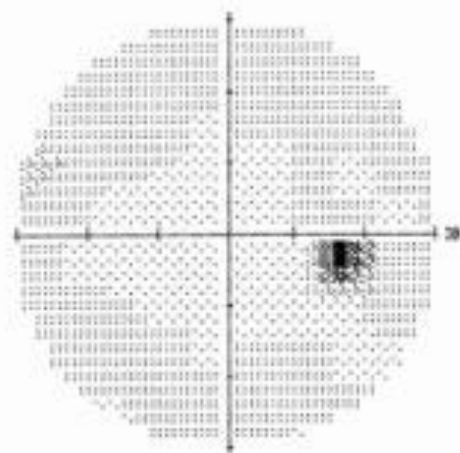
A Normal anatomy



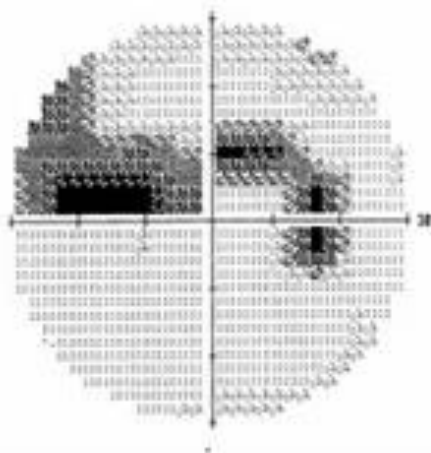
B Neurodegenerative changes associated with glaucomatous optic neuropathy







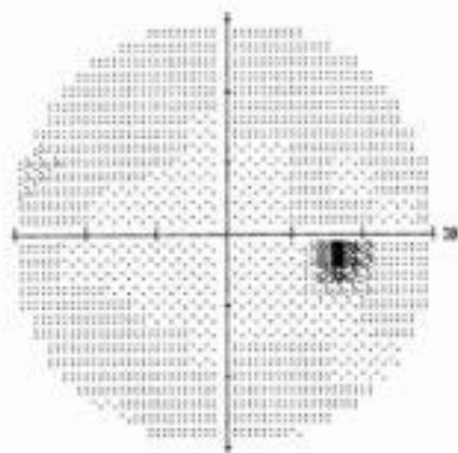
▲正常な視野



▲欠損が現れた視野



▲実際の見え方（イメージ）



▲正常な視野



▲欠損が現れた視野



▲実際の見え方（イメージ）

不可逆



青光眼，一段歷史



巴里紅眼睛



青光眼，一段歷史





青光眼，一段歷史

- **1772BC** 古巴比倫漢摩拉比法典裡記錄了眼科手術的費用。
- **1550BC** 埃及的莎草紙文獻裡記載100種治療眼疾的方法。
- **600BC** 印度的醫書裡記載了躺臥的白內障手術。
- **460-375BC** 希臘醫神希波克拉底描述了青光眼。
- **250BC** 中國漢朝記載了針灸及多種治療眼疾的方法。
- **30 BC** 羅馬的醫書曾紀錄晶體針拔術治療白內障。
- **170AD** 古希臘醫師蓋倫在許多書上記載各種治療眼疾的方法。

1025AD

The Canon of Medicine



青光眼

古希臘字 **glaukos**

原指青藍色微弱的閃光，
代表海水的顏色。

光線無法照射到海底，海水是不透澈的；所以當眼睛含有太多「海水」，顯現出青綠色時，就表示生病了。

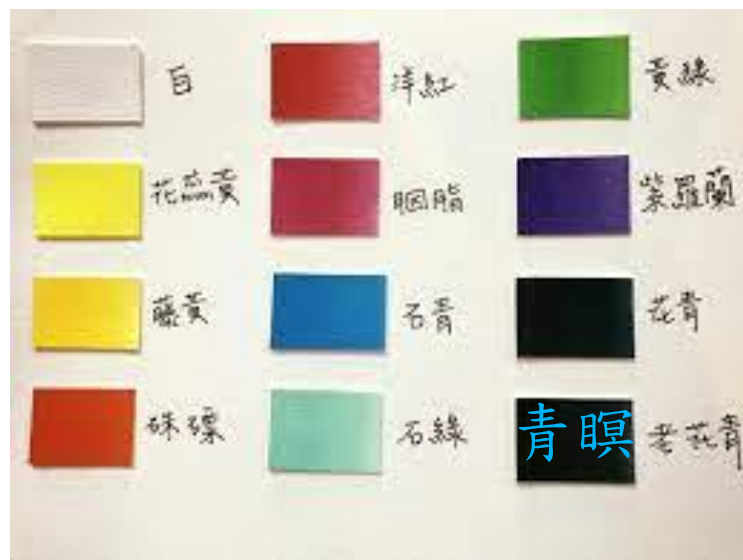
青出於藍

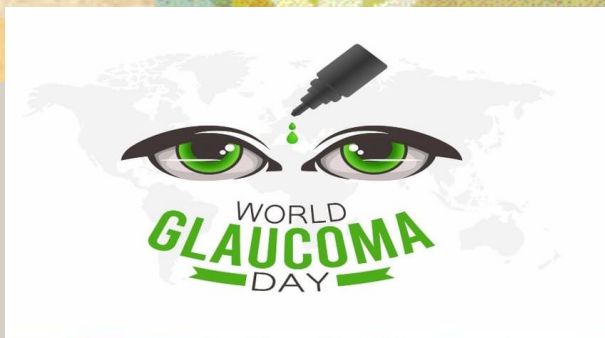
青睞以對 垂青

青睞



青光眼





青光眼

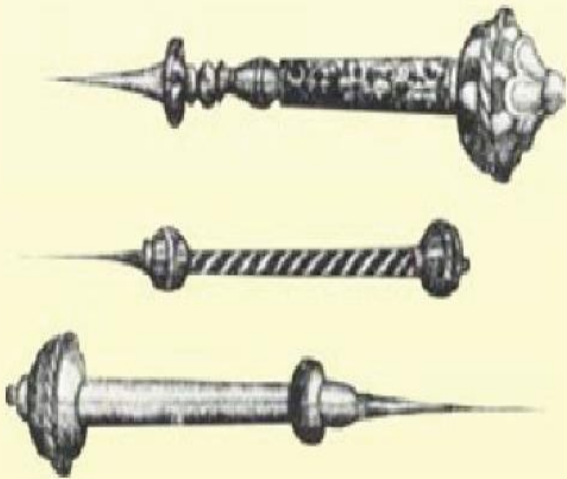
古希臘字 **glaukos**

原指青藍色微弱的閃光，
代表海水的顏色。

百四十四年前 Hippocrates
描寫 glukosis

老年人看不見東西

金針撥障Couching



羅馬時期使用之白內障摘除術針



金篦刮目

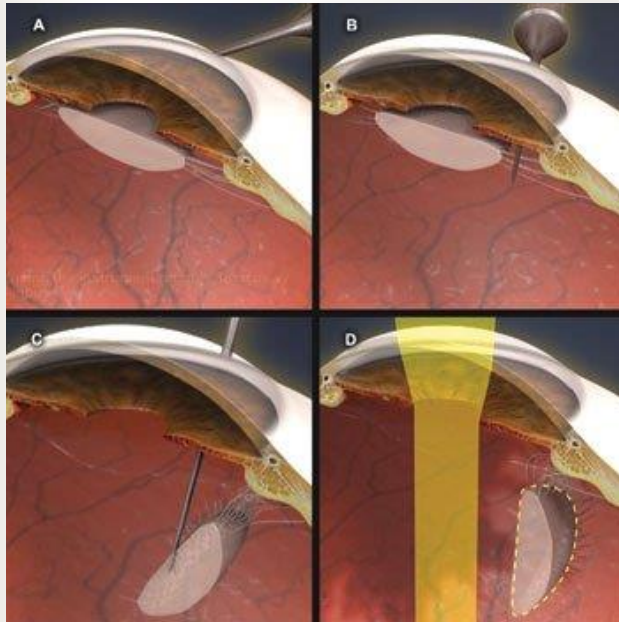
■ 劉禹錫 看朱漸成碧

■ 白居易 人間方藥應無益，爭得金篦試刮看

■ 杜甫 金篦空刮眼，鏡像未離銓

■ 李商隱 刮目想金篦

■ 蘇東坡 針頭如麥芒..而況清淨眼，內景含天燭。琉璃貯沆瀣，輕脆不任觸…觀者頸為縮。運針如運斤，去翳如拆屋…刺眼如刺肉。君看目與翳，是翳要非目。目翳苟二物，易分如麥菽。...



流傳至今





曾經是這樣的……

雖然我不知道眼睛生的是什麼瞎病

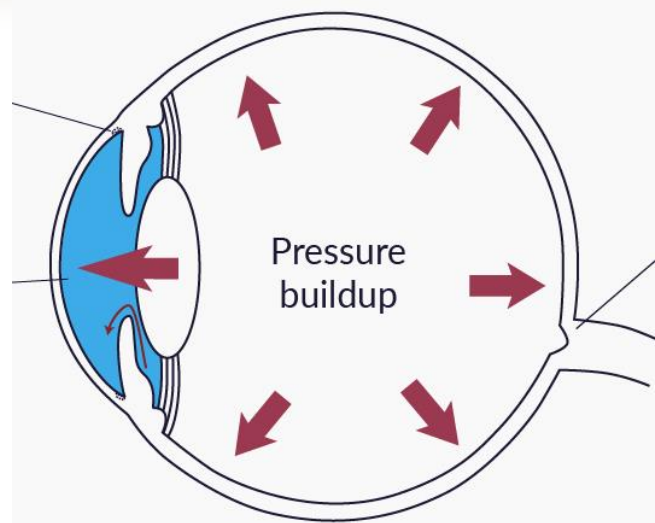
一律手術解決

治好的是白內障
治不好的是青光眼

At a glance: 青光眼

a tempest in a teapot

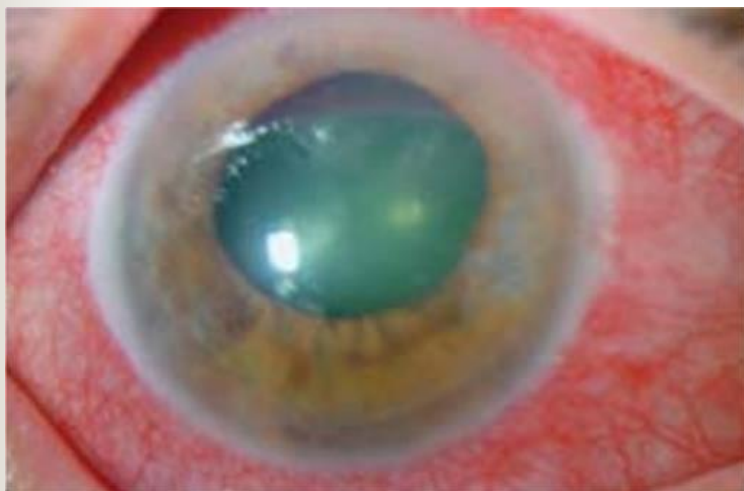
茶壺裡的風暴



- 衛福部資料：台灣青光眼患者34萬人，預估在2020年盛行率 0.5%(WHO) → 2%
- 青光眼款式百百種，日常生活中的青光眼

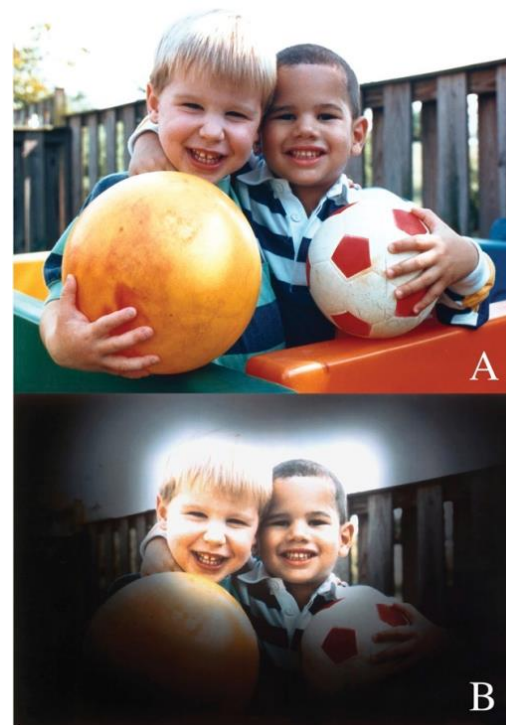
青光眼

1. 殺手級症狀



致盲率 22.6%

2. 小偷級症狀



致盲率 11.1%

青光眼



2. 小偷級症狀

慢性開放性青光眼，**完全沒有症狀**，病程可以進展10-20年，不知不覺逐漸侵蝕視神經。



健康人的正常視野

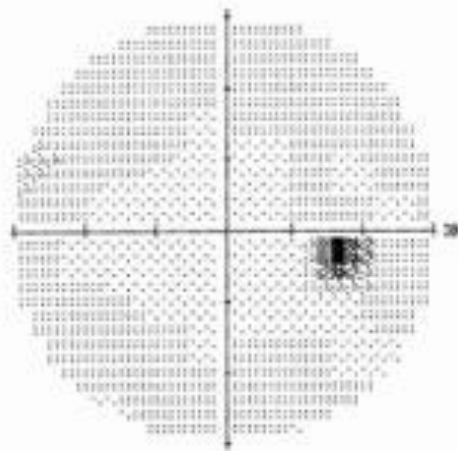


部份視野缺失

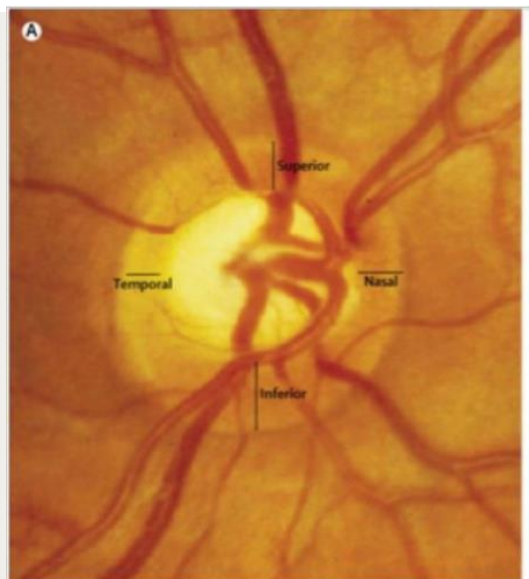








▲正常な視野

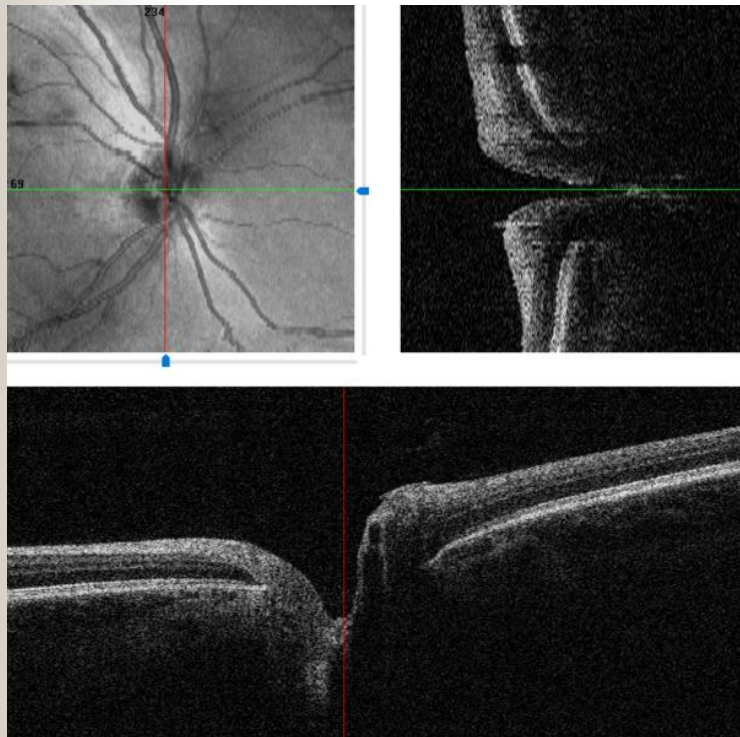


HUVITZ HNT-7000
Ver 1.02.03A

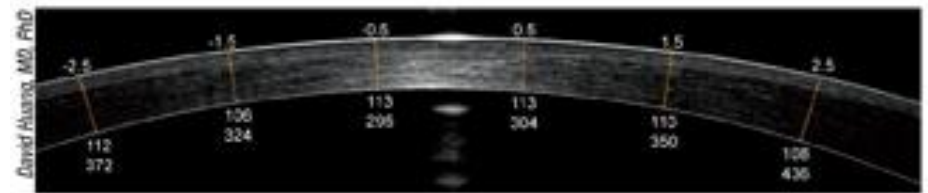
IOP	<R>	<L>
	13	12

AVG (mmHg)	13	12
---------------	----	----

青光眼科三大基本検査



https://en.m.wikipedia.org/wiki/File:SD-OCT_Optic_Disc_Cross-Sections.png



<https://www.reviewofophthalmology.com/article/making-the-most-of-anterior-segment-oct>



Anterior segment OCT is very useful for patient education. Showing patients examples like the ones above makes the anatomical difference between an open (A) and closed (B) angle immediately apparent.



青光眼

2% at 40 y/o

10% at 70 y/o

視覺功能下降 憂鬱 治療副作用 經濟負擔

- **no cure** for glaucoma,
- **early treatment** can often stop the damage



青光眼治療

藥物

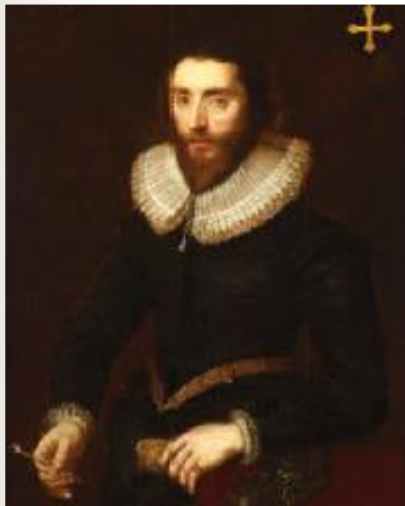
雷射

手術

Treatment: Medicine (usually eye drops),
laser treatment, surgery

青光眼

- 1876年Adolf Weber 應用毛果鹼 **pilocarpine**
藥物
- 1878 年Louis de Wecker 鞏膜切開術
手術



古希臘醫師希波克拉底（Hippocrates）曾提出關於「青光眼」一詞；而17世紀時，英國醫師邦尼斯特（Richard Banister）的眼科學書裡也描述了青光眼與眼壓高有關。直到100多年後1973年，波蘭醫師達恩斯（Stephen Drance）說明青光眼的定義，是一種多重原因造成的視神經病變。

YEAR	DRUG CLASS
1877	Cholinergic agonists
1897	Crystalline alkaloids
1904	Osmotic agents
1948	Adrenergic antagonists
1954	Carbonic anhydrase inhibitors
1955	Adrenergic agonists
1978	β -adrenergic inhibitors
1987	α -adrenergic agonists
1995	Carbonic anhydrase inhibitors
1995	Adrenergic agonist prodrug
1996	Prostaglandin analogs
2017	Rho kinase inhibitors

1905 眼壓計

就像愛情的樣子



R.I.P

adrenergic antagonists

- Patients given intravenous **dibenzamine** often experienced IOP levels dropping below 25 mm Hg for up to 24 hours.
- Unfortunately, it was only effective if administered intravenously
 - severe orthostatic hypotension.
 - Long periods of bed rest
 - some deaths were reported.



a Rho kinase inhibitor

- 2017 approval of netarsudil
(Rhopressa, Aerie Pharmaceuticals), a Rho kinase inhibitor.

- 2019年3月12日 , (FDA) Rocklatan
RHOPRESSA[®]

2022 Alcon, The ex-US marketing Santen,



青光眼

- 1876年Adolf Weber 應用毛果鹼 pilocarpine
藥物
- 1878 年Louis de Wecker 鞏膜切開術
手術



青光眼，一段手術歷史

- 1857 iridectomy Albrecht von Graefe
- 1876 trephine operation Argyll Robertson
- 1878 鞏膜切開術 Louis de Wecker
- 1905 cyclodialysis Leopold Heine
- 1906 Iridenclesis Soren Holt
- 1909 Corneo-scleral trephining Robert Henry Elliot
- 1936 Goniotomy Otto Barkan

青光眼，一段手術歷史

■ 1857 iridectomy

■ 1876

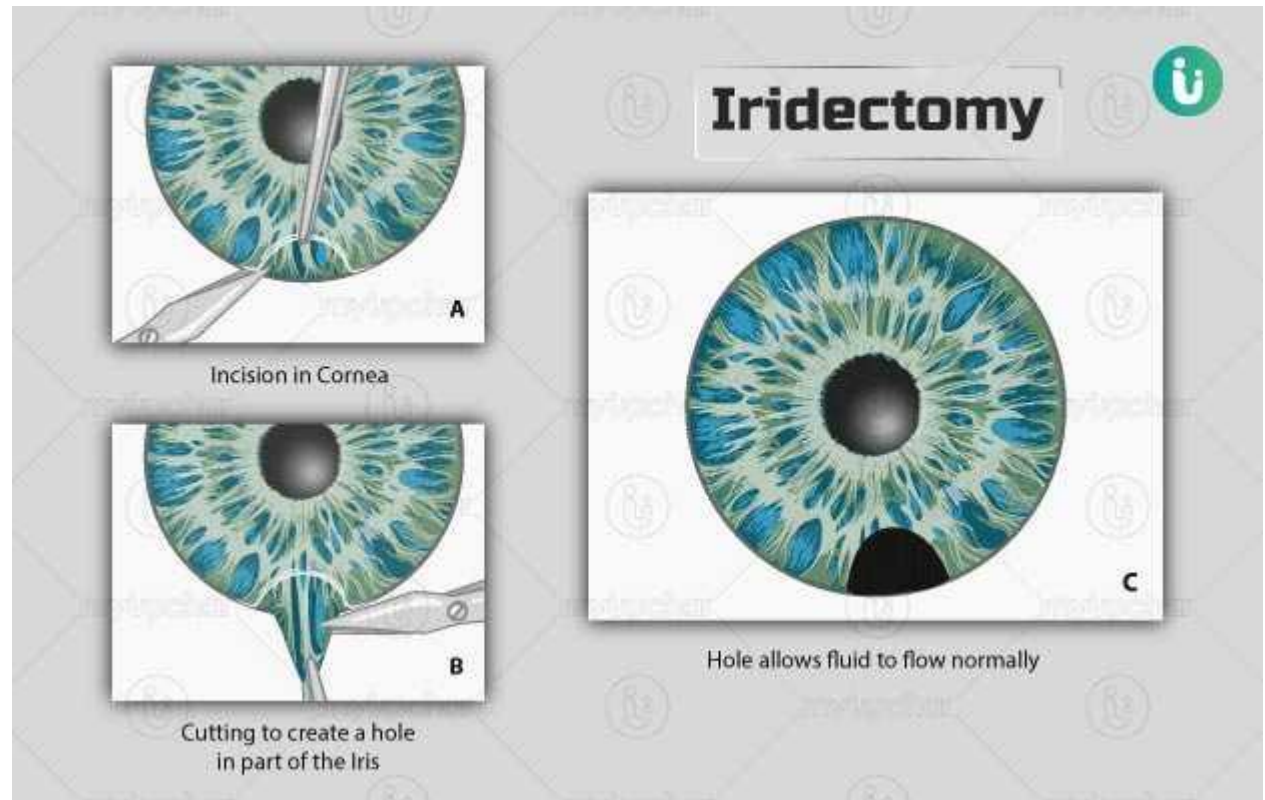
■ 1878

■ 1905

■ 1906

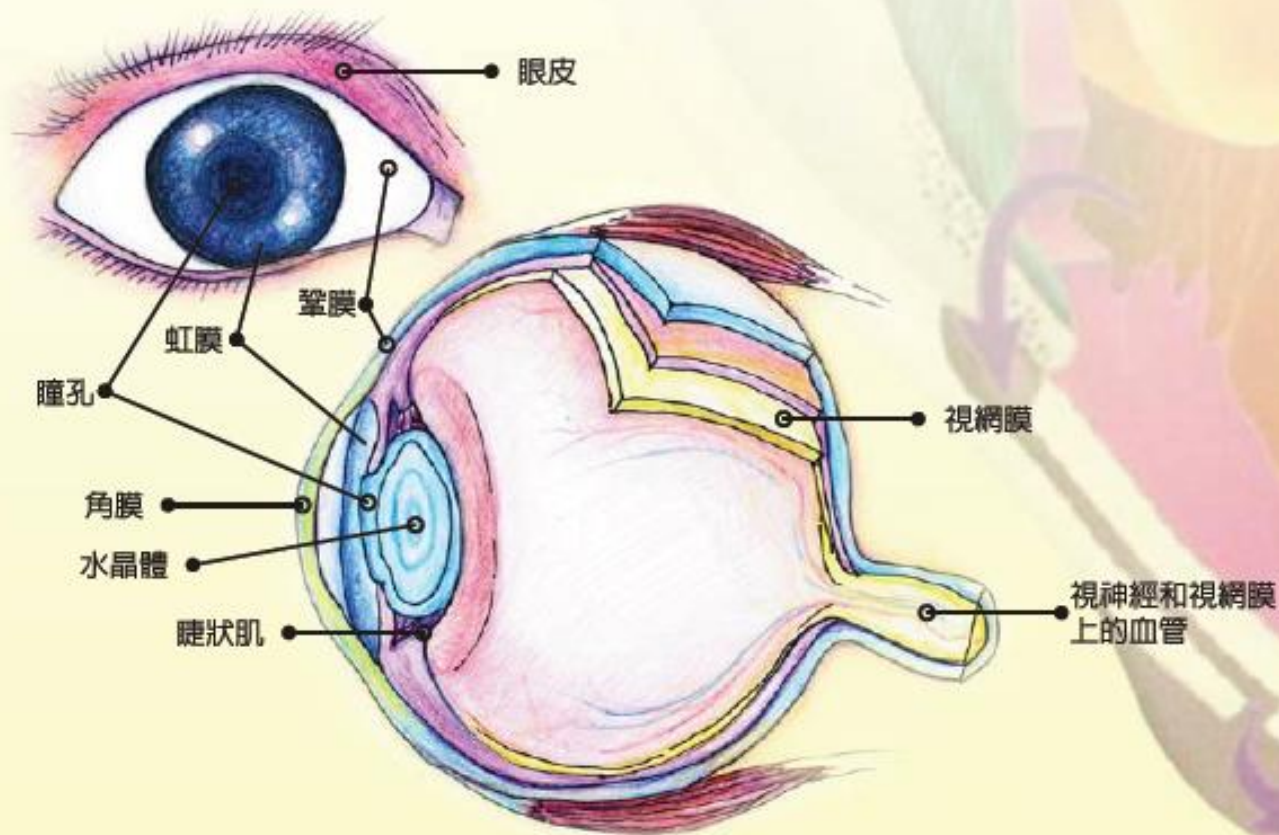
■ 1909

■ 1936



小樑切除術 Trabeculectomy

當藥物與雷射治療已無法有效控制眼壓時，建議施行「濾過性顯微手術」此種手術方式為在鞏膜（黑白輪部交接的部分）開一個小小的洞引流房水，稱為「小樑切除術」，目的是將過剩的房水引流出眼睛，以減少或避免視神經受到進一步的傷害，這種手術最早在1968年由英國醫生凱恩斯（John Cairns）提出，並成為青光眼引流手術的主流。



1968

medicine in 1923 at the early age of 22 years.

In 1924 he joined the Colonial Medical Service and was appointed to Uganda, where in 1929 he married Alice, daughter of Sir Charles Griffin, QC. Five sons and five daughters were the product of this long and happy marriage. Early in his career he specialised in ophthalmology, though this had to be combined with the duties of a general medical officer until 1945, when he was finally gazetted as senior specialist ophthalmologist. In addition to his clinical duties, Arthur Boase was at various times president of the East African Association of Surgeons and the Uganda branch of the BMA. Together with his colleagues he was instrumental in founding the medical school at Makerere. He was also the first chairman of public health when Kampala became a municipality. Despite these many commitments Arthur Boase found time to be an enthusiastic golfer and to develop an interest in woodwork, which was to be his absorbing hobby well into his retirement.

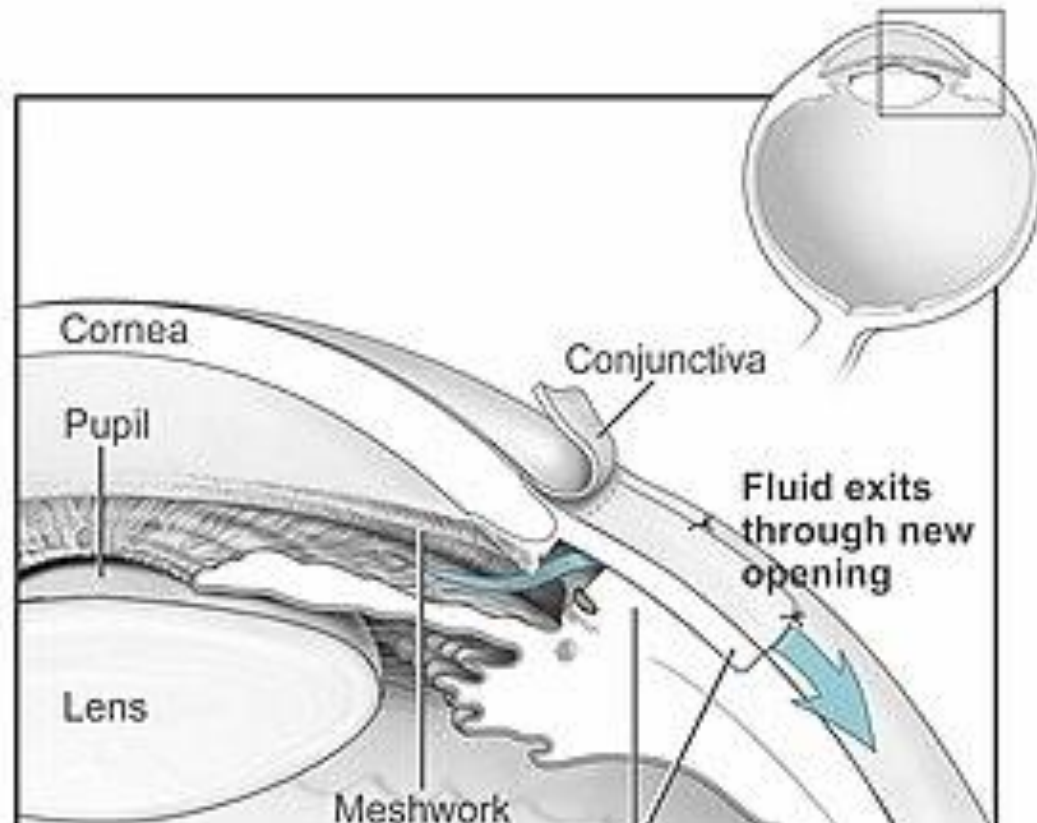
Arthur Boase retired from Uganda in 1956 to take up the post of warden of the Ophthalmic Hospital of the Order of St John in Jerusalem. The next 13 years proved to be very eventful. The early days were spent in the cramped quarters of Watson House in the old City before moving to the large modern Eye Hospital which was built on the northern outskirts of Jerusalem. During this time the hospital acquired a remarkable reputation throughout the Middle East, and every year treated a large number of patients. A visit to the hospital was the itinerary of many ophthalmologists. Arthur Boase's war-time experience was a place for ophthalmic round off their training. He had their dangerous situation during evacuation and his wife were in the Jordanian people.

On retirement from Uckfield, Sussex. He still needed and he could



y

AJO 1968 Oct;66(4):6
Trabeculectomy. Preliminary
J E Cairns
•PMID: 4891876





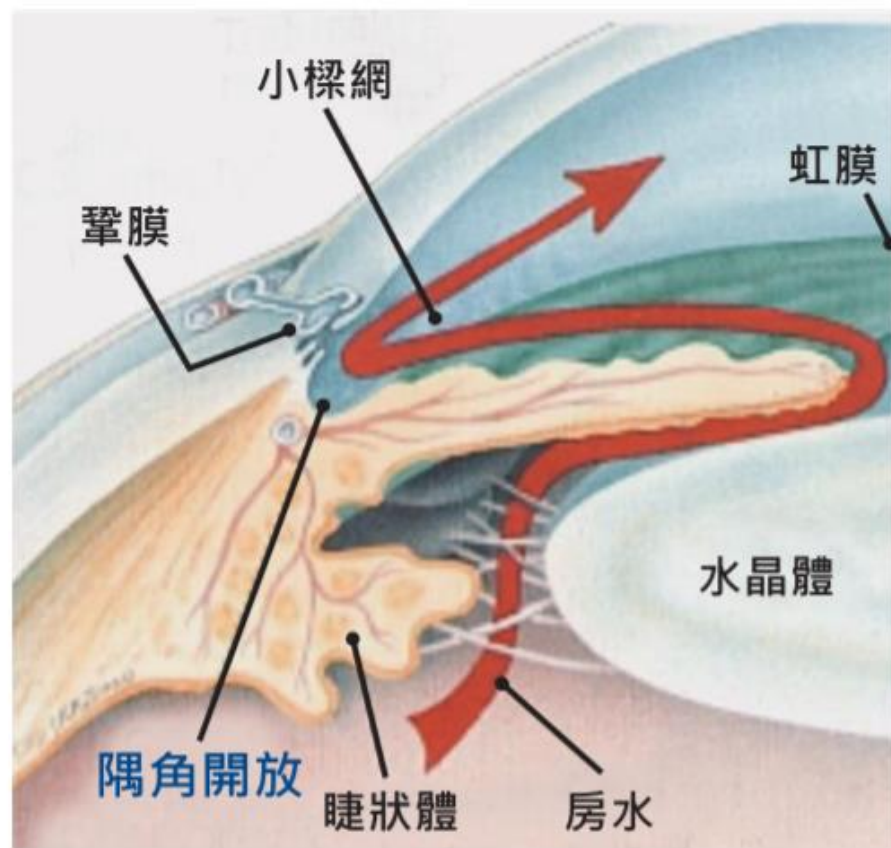
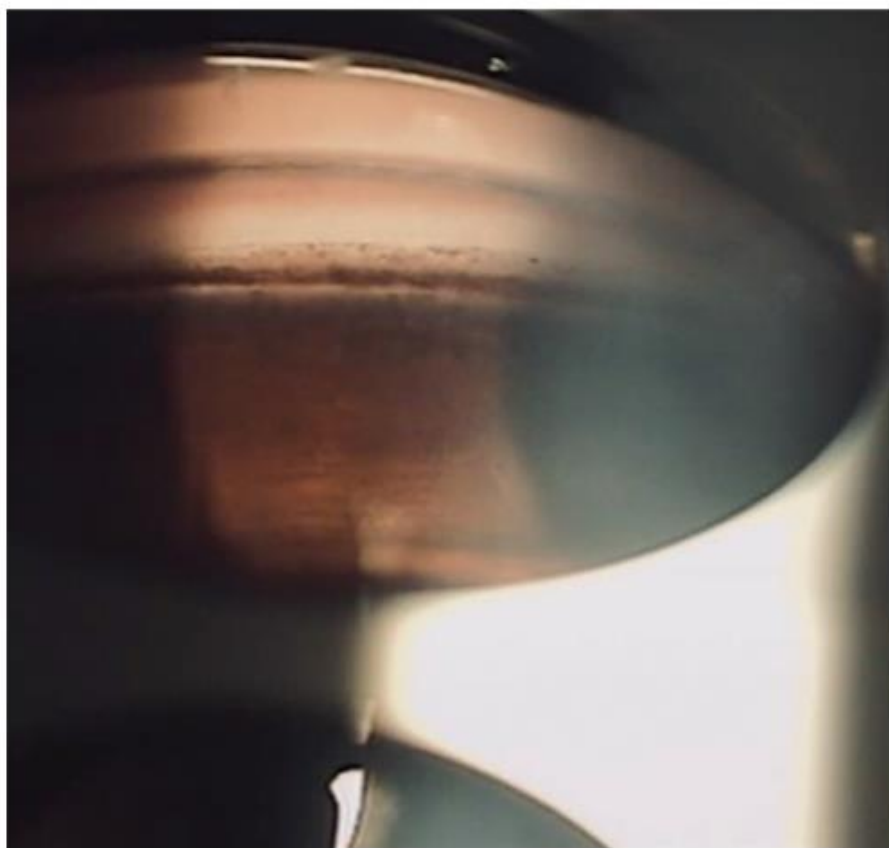
青光眼治療

藥物

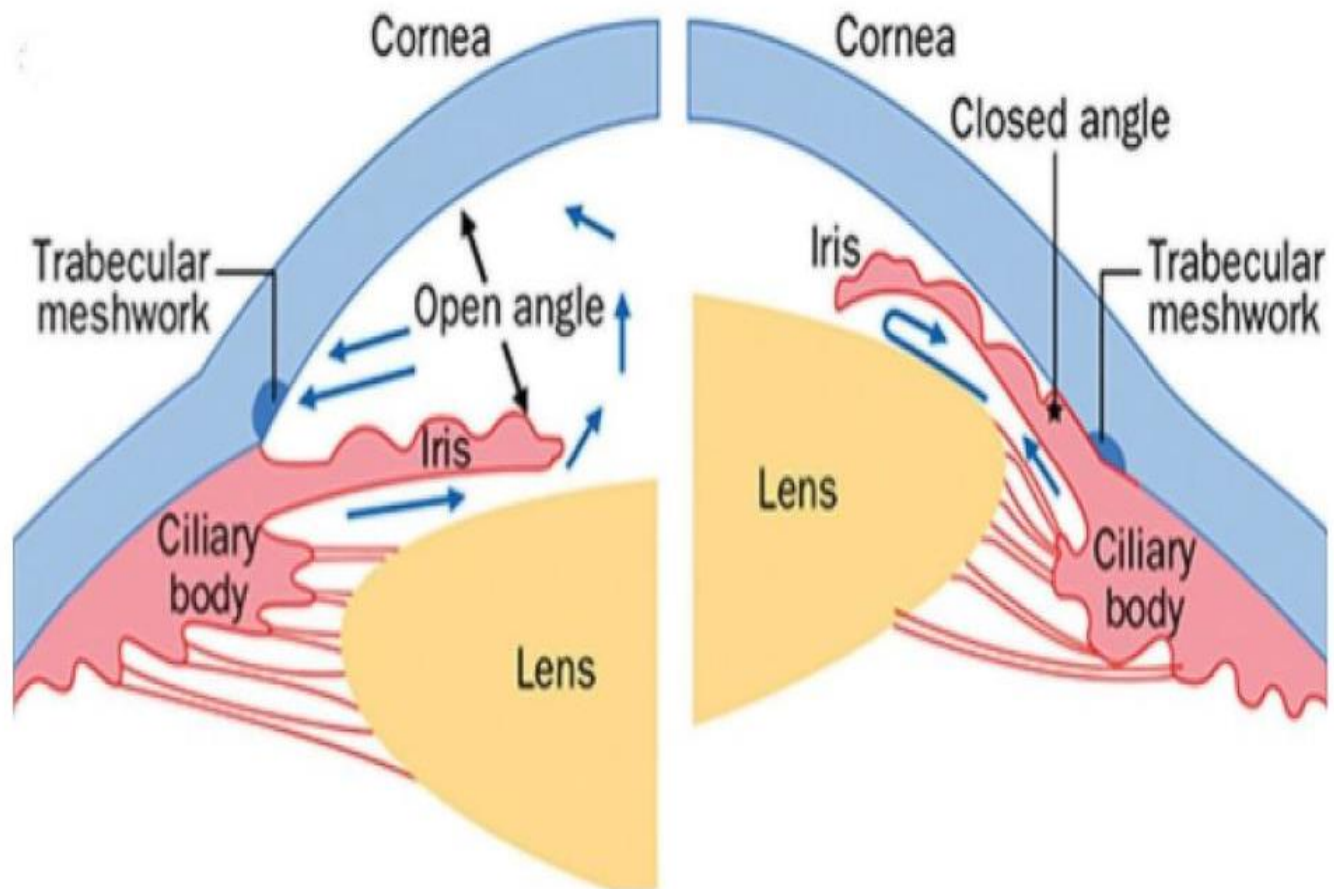
雷射

手術

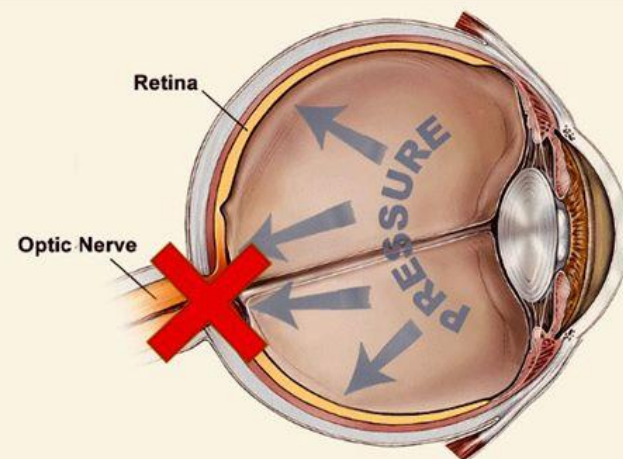
Treatment: Medicine (usually eye drops),
laser treatment, surgery



開放型青光眼隅角排水狀態

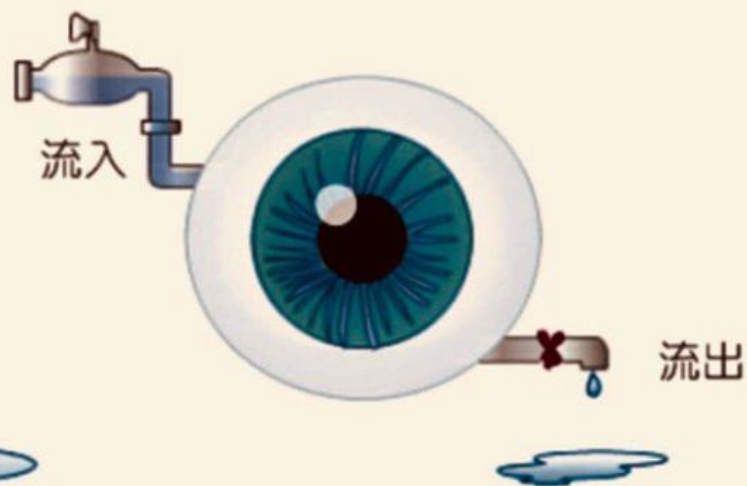
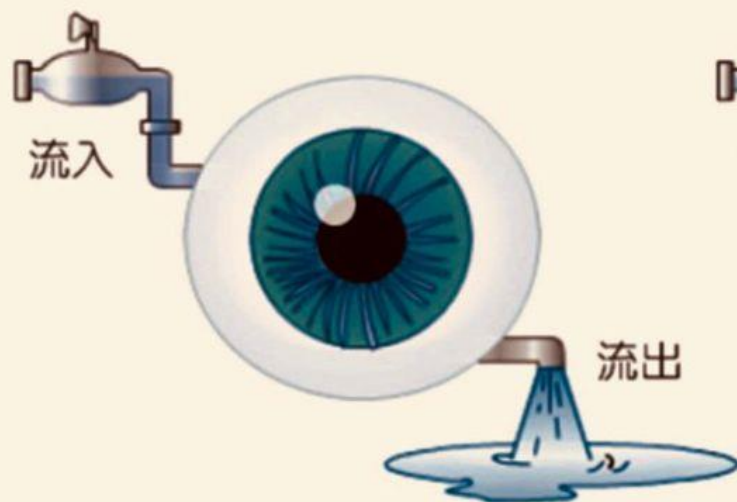


<https://www.ncbi.nlm.nih.gov/books/NBK543075/>



正常情况

青光眼患者

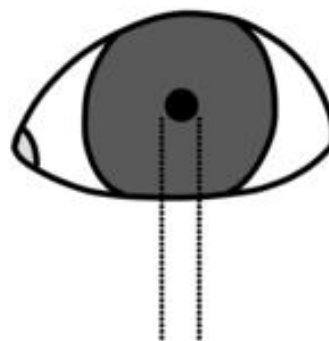




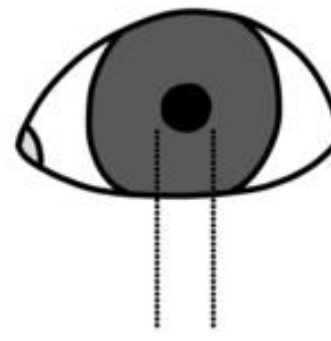
縮瞳

正常

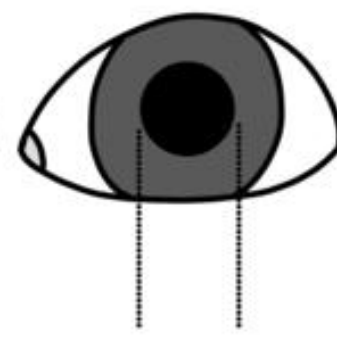
散瞳



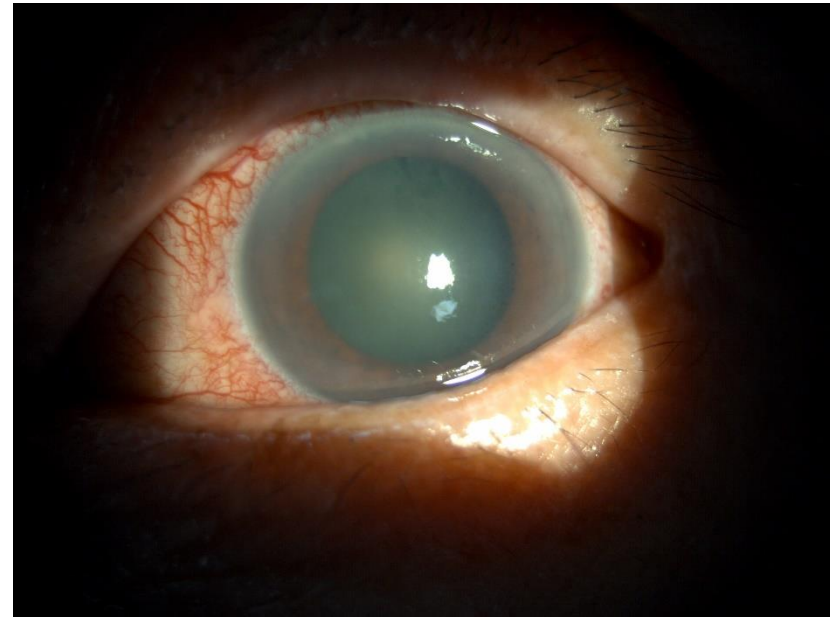
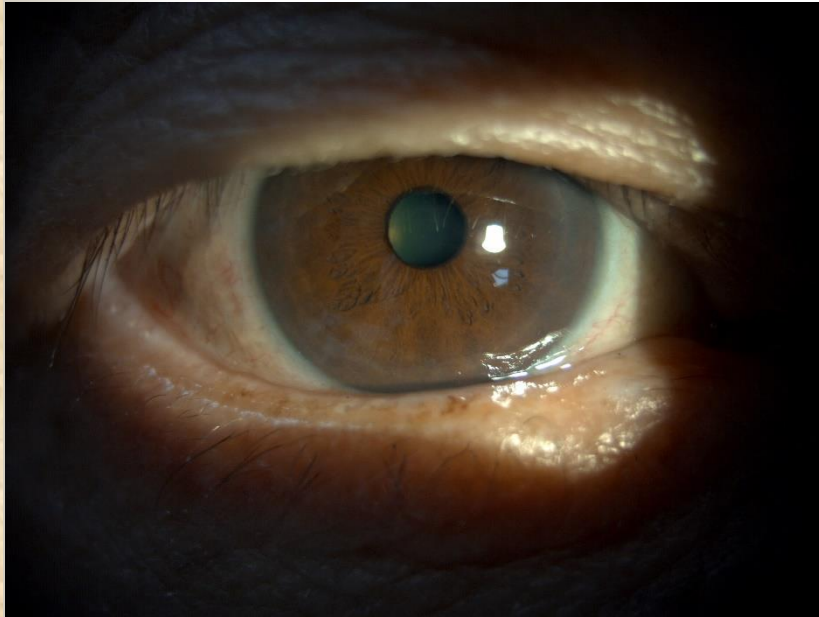
2mm以下



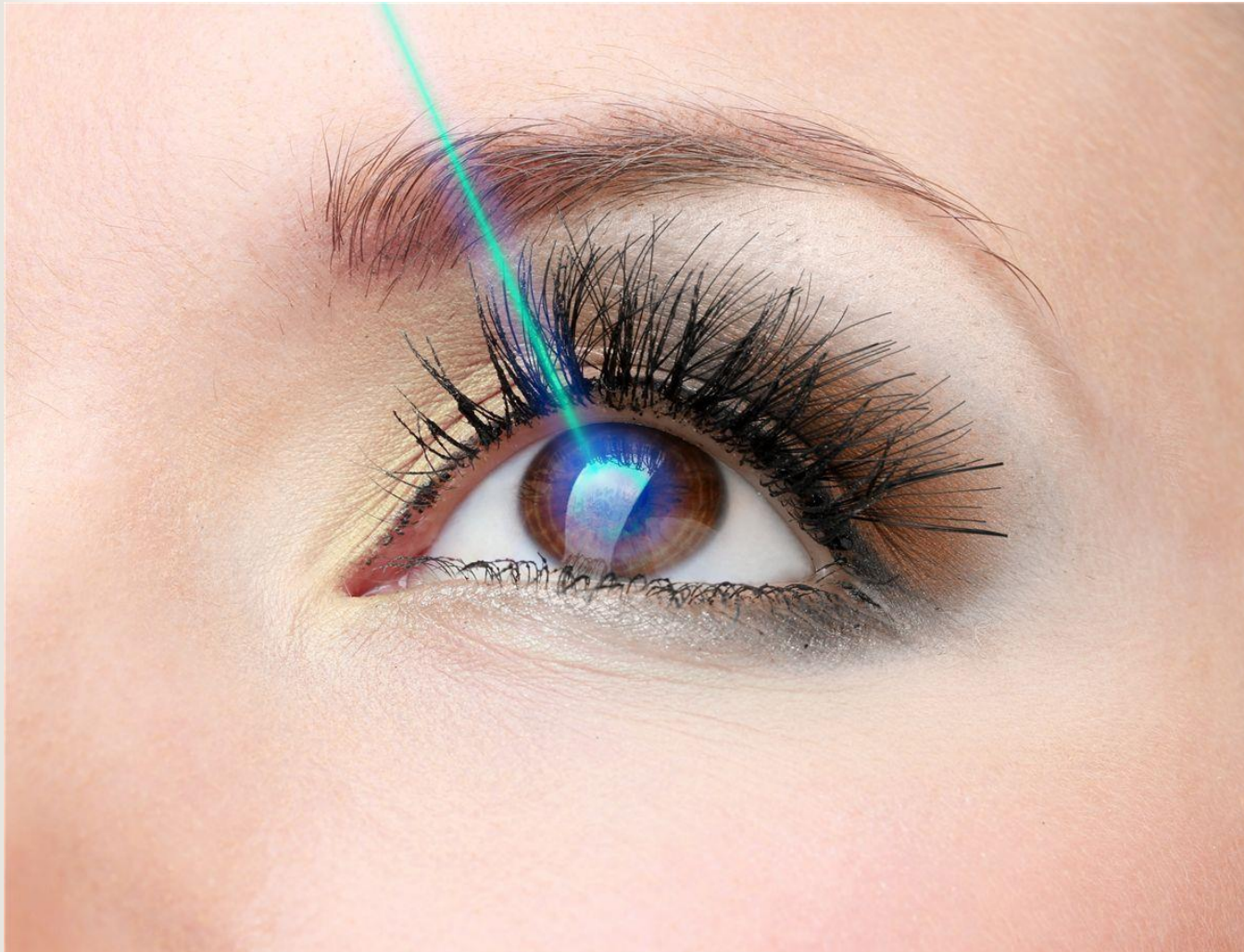
2~5mm



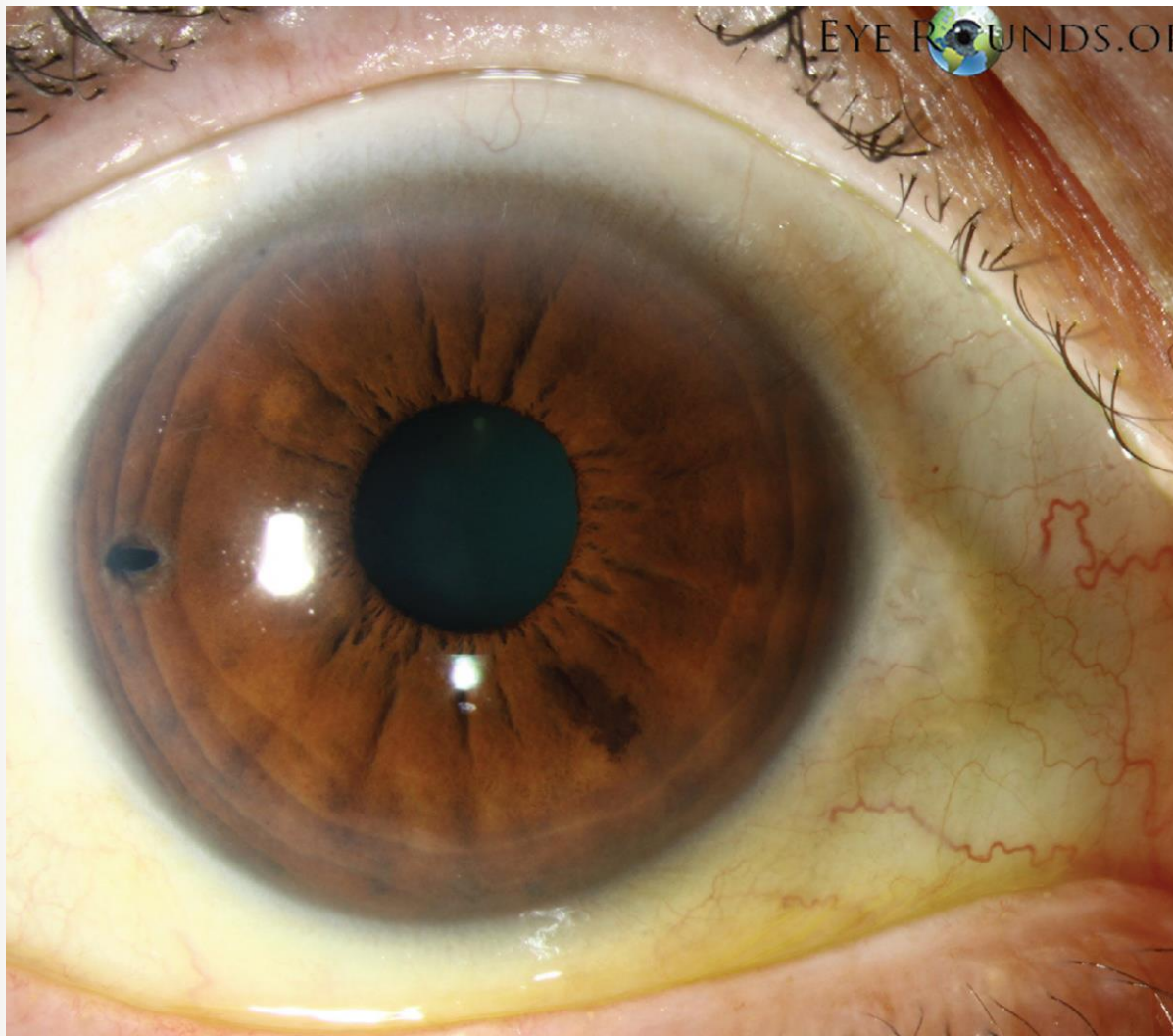
5mm以上



雷射虹膜穿術



雷射虹膜穿術



青光眼

March 6

