

Laser in ophthalmology

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Laser mean : light amplification by stimulated emission of radiation

Nd:YAG laser

Mechanism of action : photodestruction

Indications of Nd: YAG laser in ophthalmology :

(1)-Posterior capsulotomy : Creation of an opening in the posterior capsule thickening or opacification which is the most common late complication of uncomplicated cataract surgery

Indication for capsulotomy :

- 1-Diminished visual acuity
- 2-Diplopia or glare
- 3-Inadequate fundus view

Complications of the capsulotomy:

- 1-Damage to the IOL
- 2-Cystoid macular oedema
- 3-Rhegmatogenous retinal detachment
- 4-Intraocular pressure elevation
- 5-Posterior IOL subluxation or dislocation
- 6- Chronic endophthalmitis

(2)-Nd:YAG laser iridotomy: the purpose of peripheral laser iridotomy is to re-establish communication between the posterior and anterior chamber by making an opening in the peripheral iris. laser iridotomy is effective in about 75 % of eyes with acute angle-closure glaucoma.

Argon laser

Mechanism of action : photocoagulation

Indication :

- 1- Diabetic retinopathy
- 2- Hypertensive retinopathy
- 3- Some intra ocular tumors
- 4- Prophylactic treatment for retinal degenerations in high myopia
- 5-Retinal vascular diseases.
- 6-Argon laser trabeculoplasty in cases of glaucoma.

Excimer laser

Mechanism of action : photoablation

Indication:

For correction of refractive errors (myopia, hypermetropia and astigmatism)

LASIK (laser in-situ keratomileusis)

PRK (Photorefractive keratectomy)