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# **GLARE , CONTRAST AND LIGHT CONTROL**



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# GLARE , CONTRAST AND LIGHT CONTROL

- Glare and photophobia are seen in albinism, achromatopsia , retinal cone dystrophy ,optic atrophy , aphakia , glaucoma and retinitis pigmentosa.
- Fluorescent light is normally considered harsh because its out put is in blue spectrum
- Incandescent light is more directional and has main spectral output in longer wavelength , it generally provide more contrast.



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**Fig: 16 GLARE , CONTRAST AND LIGHT CONTROL**



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# FILTERS

- filters will attenuate excessive light to comfortable level and reduce both discomfort and disability glare
- Filter can alter colour perception ,enhance contrast by reduction of glare and scattering



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# RECOMMENDED FILTERS

FILTERS	PROPERTIES AND USES
4% dark plum	This is very dark, general purpose filter that provide good contrast and glare reduction
40% dark amber	Particularly help on very bright days, comfortable when working on computer
58% light gray	Relieves indoor glare, especially under fluorescent light
32% medium gray	For macular degeneration
13% standard gray	Diabetic patient or people who have done corneal transplant
65% yellow	Heightens contrast in retinitis pigmentosa and macular degeneration



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FILTERS	PROPERTIES AND USES
49% orange	For patient of retinitis pigmentosa
44% red	For achromatopsia or red monochromacy and albinism
CPF 450(yellow color)	For glaucoma patient
CPF 511( <u>yellow orange</u> )	For early cataract
CPF 527(orange)	For macular degeneration



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# COATING AND TINTS

- In patient with glare and photophobia we can add different types of glare controlling mechanism with spectacle such as
  - Coating and tints
  - Polaroids
  - Yellow or amber filters
  - Photochromatic lenses
  - Yellow tinted lenses brighten the background on foggy , dark days and may improve reading performance and visual acuity through enhanced contrast.



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# TYPOSCOPE

- Prentice describe typoscope is a device that excludes all light reflected from the surface of paper that except which actually affords the necessary between it and the type within the slot.
- Yellow acetate filter cab be attached to the window of the tyoposcope to further increase contrast
- For large print size the slot size is 19\*13 cm.





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**Fig 17 TYPOSCOPE**



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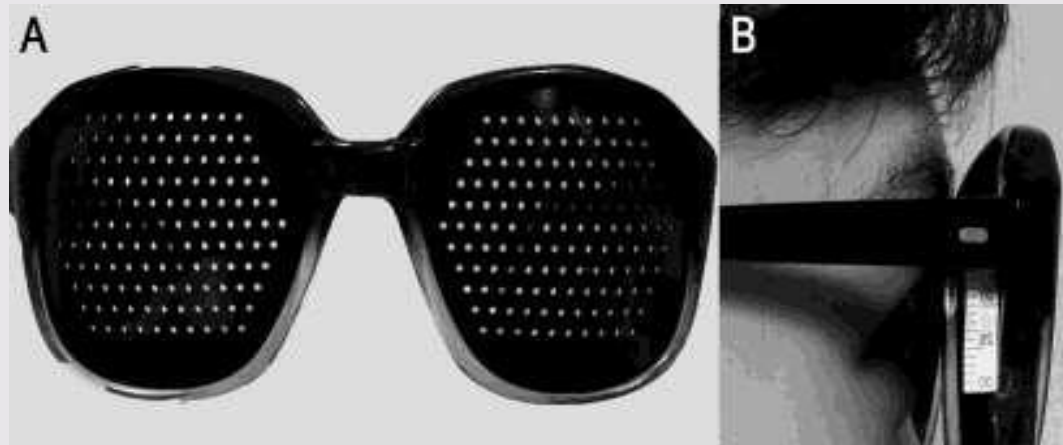
# PINHOLE AND STENOPIIC SLITS

- Both based on principle of paraxial rays to reduce size of blue circle on the retina
- Peripheral distortion , reflection from ocular media finds the largest application for pinhole .
- Suggested diameter of pinhole should be 1mm
- Distance between pinhole should be equal or greater then the pupil size under normal light conditions.



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**Fig:18 PINHOLE AND STENOPIC SLITS**



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# POSTURE COMFORT MAINTENANCE

- High powered optical system prescribed to make relative distance magnification , the reading material must be maintain at close and fixed working distance
- For elderly , infirm , arthritic , multiple sclerotic patient with tremored correct posture most be maintain to help to prevent premature fatigue .
- Reading racks and book stand can aid in the placement of book and other material at unusually close working distance to achieve RDM.



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# MEDICAL MANAGEMENT NON OPTICAL DEVICES

- Daily task involve identification of medication , measuring dosages , taking blood pressure , checking once weight ,self monitoring blood glucose level and temperature.
- The glucometer may have large display screen or an auditory output or both
- Syringe magnifier is not strictly non optical but can be use for identification
- Large readout thermometers and talking thermometers make taking blood pressure easier



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# Reference

- Low vision manual; A. Jonathan Jackson
- Essentials of low vision practice.