

Role of Low Vision Devices in Childhood Blindness

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Low vision optical devices include a variety of gadgets, for example, stand and hand-held magnifiers, strong magnifying reading glasses, loupes, and small telescopes. Since these devices can significantly increase magnification power and prescription strengths, alongside higher-quality optics, they are different from regular spectacles

and commercially available magnifiers. Low-vision devices are designed to improve visual execution in children with low vision, in this way empowering scholarly and social adjustment and giving advancement of day by day encounters. They can be optical or optical and electronic.

Optical Aids for Distance and Intermediate Distance

The telescopic system (TS) or telescope is an optical instrument that improves the resolution of an object by increasing the size of the image projected on the retina, making it closer. It is available for far, near, and middle distances

A telescope enables greater participation in daily and social activities such as watching television and reading whiteboards, street signs, house numbers, billboards, et cetera. However, its disadvantages are restriction of visual field and illumination, difficulty in locating and focusing on objects quickly, and limited focus depth, cost, difficulty in using the devices, and aesthetic considerations limit its use.

Galilean Telescope

The Galilean telescope is a simple system consisting of 2 lenses, an objective lens which is a convex (plus) lens, close to the object and an ocular lens which is a minus lens, positioned near the eyes.

The difference in their focal lengths determines the distance between the two lenses. The image produced is real and erect. It is lighter, shorter, and cheaper than the Keplerian type, thus the first-choice prescription for children. It is also the first choice in cases of peripheral field loss; in these cases, the lens order is designed in reverse (plus lens closer to the eye), providing a wider visual field.

Keplerian Telescope

Also known as astronomical or prismatic telescope, the Keplerian telescope is an optical system that uses two convex (plus) lenses, the objective lens of lesser dioptric power than the ocular. The distance between the two lenses is the sum of their focal lengths. The image formed is real and inverted and needs a prism to reverse the image, thus making it longer and more cumbersome. It produces greater visual field and better optical quality than Galilean telescope.

Hand-Held, Spectacle-Mounted, or Clip-On Telescope

A hand-held telescope is simple to use, lighter, and cheaper than the Galilean and Keplerian telescopes. It is particularly indicated for short activities and could be the first prescription choice for children.

A spectacle-mounted telescope has the advantage of leaving the hands free. It is helpful for prolonged activities. However, they both weigh and cost more.

The clip-on model has the advantages of both: It is lighter than the spectacle-mounted model. However, it can scratch the lenses and reduce the visual field to further distances.

Monocular or Binocular

A monocular telescope is better suited when there is a significant difference in visual acuity (VA) between the two eyes. It is more discreet, lighter, and cheaper. It may be used in the dominant or better-seeing eye. The binocular telescope is suitable when there is similar visual acuity in both eyes, to increase the visual field, and for nystagmus. The binocular style both weighs and costs more than monocular

Fixed-Focus, Focusable, or Autofocus Telescope

A fixed-focus telescope is suitable for children with poor motor coordination. Nowadays it is rarely prescribed; a focusable telescope reaches far, near, and intermediate distance and is preferred for and by children. The autofocus telescope both weighs and costs more, and it does not constitute the first choice prescription for children.

Optical Aids for Near Tasks

Children often do not complain about their difficulty with near work. With adequate accommodation by getting closer for the small print, they can read without a problem. However, as

