

of curvature, preferably from 15 to 30 mm radius of curvature. As stated above the radius of curvature of the optical surface of varying power is varied to adjust the optical power of the lens implant.

The lens implant of the present invention is particularly envisaged for use where a cataract has been removed. However, the lens implant of the present invention may be used to correct refractive errors and myopia without prior cataract extraction.

Thus, the lens implants of the present invention usually range from plano-convex to biconvex but as shown in FIG. 6, the posterior and anterior face of the optical portion 12 may have curves facing in the same direction which results in a concave-convex lens.

The lens implant of the present invention may include location members such as indentations, recesses or holes to assist in positioning the lens in the middle of the eye. The lens implant can be inserted at the time of cataract extraction or as a secondary implant. The lens can be inserted by the standard procedure. The design of the lens also allows the flanges 14 to be inserted in a folded condition and then be allowed to open out through their own inherent resilience to engage with the ciliary sulcus 28. The flanges 14 avoid the use of prolene hooks or the like which have been used in the past.

Whilst it is preferred to insert the lens in hydrated condition from a vial as shown in FIG. 13, the lens implant could be inserted into the eye dry and hydrated subsequently to hydrate and swell it. The advantage of dry insertion is that it allows the lens implant to be inserted through a small wound in the eye.

The lens implant of the present invention may have a built in U.V. filter which is incorporated in the hydrogel. The U.V. filter can be incorporated in the chemical mix as polymerisation takes place or a U.V. absorbing function can be built into the polymeric chain.

It is also envisaged that in some cases anterior chamber lens would be incorporated into a posterior chamber of the eye by being reversed.

Modifications and variations such as would be apparent to a skilled addressee are deemed within the scope of the present invention.

I claim:

1. A self-supporting intraocular lens suitable for implantation in the human eye to replace the natural crystalline lens, comprising:
 - an optical portion having an anterior surface and a convex posterior surface;
 - flange means having an anterior surface and a posterior surface, said flange means extending laterally from said optical portion and projecting anteriorly, said flange means comprising a solid body which functions to support and retain the lens in place in the eye following implantation without fixation to the iris of the eye, wherein said lens is formed entirely of a hydrogel; and wherein the posterior surface of the flange means and the posterior surface of the optical portion define a single, continuous arc.
2. An intraocular lens according to claim 1, wherein the optical portion of said lens is of asymmetrical biconvex construction with the posterior surface having the larger radius of curvature.
3. An intraocular lens according to claim 1 wherein the hydrogel is hydroxyethyl methacrylate.

4. An intraocular lens according to claim 1 which is of integral construction.

5. An intraocular lens according to claim 1 wherein the optical portion has a diameter of from 3 to 10 mm.

6. An intraocular lens according to claim 5 which has a length of from 8 to 15 mm in a horizontal direction across the eye.

7. An intraocular lens according to claim 1, wherein the optical portion has a non-variable optical surface having a curvature from plano to 10 mm radius.

8. An intraocular lens according to claim 1 wherein the optical portion has a non-variable optical surface having a curvature from 15 to 30 mm radius.

9. An intraocular lens according to claim 1, which is in hydrated form.

10. An intraocular lens according to claim 1, which is in hydrated form and is contained in a sealed vial containing a quantity of physiologically acceptable electrolyte solution.

11. An intraocular lens implant according to claim 10, wherein the sealed vial is contained in a sealed over-pouch.

12. An intraocular lens according to claim 1 wherein the ratio of curvature between the curvature of the posterior face and the curvature of the anterior face is on the order of 3:1.

13. An intraocular lens according to claim 1 wherein said flange means comprises a pair of flanges which extend laterally from the optical portion.

14. An intraocular lens according to claim 13 wherein said pair of flanges taper away from the optical portion.

15. An intraocular lens according to claim 1 wherein the lens is sized for being retained in position in the eye by engagement of the flange means in the ciliary sulcus or capsular bag of the eye.

16. An intraocular lens according to claim 1 wherein, on implantation of the lens in the eye, the single continuous arc formed by the posterior surface of the flange means and the posterior surface of the optical portion is sized for initial positioning adjacent the posterior capsule.

17. A self-supporting, intraocular lens, suitable for implantation in the posterior chamber of the human eye to replace the natural crystalline lens, comprising:

an asymmetrical, biconvex optical portion having an anterior surface and a posterior surface, with the posterior surface having the larger radius of curvature; and

flange means having an anterior surface and a posterior surface, said flange means comprising a pair of flanges disposed on opposite sides of the optical portion, said flanges extending laterally and projecting anteriorly from said optical portion, each of said flanges having a first end proximal to the optical portion and a second end distal to the optical portion, said first end having a width substantially equal to the diameter of the optical portion, said flange means functioning to support and retain the lens in place in the eye following implantation without fixation to the iris of the eye;

wherein said lens is formed entirely of a hydrogel, and the posterior surfaces of the flange means and posterior surface of the optical portion define a single, continuous arc.

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