CLAIMS

1. An ophthalmic lens comprising:

an apex having distance vision correcting power;

a power distribution increasing smoothly radially outward, from the apex to a peak power rise more positive than the distance vision correcting power;

the power distribution having a first power at design point (DP) between the vision-correcting power and the peak power rise, the power distribution between the apex and design point sufficiently like in power to the distance vision correcting power to contribute to distance correction, the power distribution increasing at a first rate between the apex and the design point;

the power distribution having a second power outside of the design point, the power distribution outside of the design point sufficient to create blur surrounding images on the user's fovea, the power distribution increasing at a second rate greater than the first rate immediately outside of the design point,

the first power and power distribution structured to increase depth of focus and to reduce accommodative lag stress for the user of the lens over time and a period of generally all day wear to reduce the progression of myopia.

2. An ophthalmic lens according to claim 1 wherein the peak power rise is in the range of +1 to +10 diopters.

3. An ophthalmic lens according to claim 1 and wherein the design point (DP) is at a radial distance from the apex in the range of 0.5 millimeters and 1.5 millimeters.

4. An ophthalmic lens according to claim 1 and wherein:

the lens is configured to reduce a user's lag of accommodation +0.25 to +1.00 diopters.

5. An ophthalmic lens according to claim 1 and wherein:

the lens is an intraocular lens.

6. An ophthalmic lens according to claim 1 and wherein:

the lens is formed in a person's optical tissue.

7. A method of designing a refractive lens for reducing myopic progression, comprising:

determining a person's unaided eye depth of focus;

defining a treatment lens having a smooth and continuous power distribution configured to increase the person's depth of focus when in use,

the power distribution having a first power at a design point (DP) between the vision-correcting power and the peak power rise, the power distribution between the apex and design point sufficiently like in power to the distance vision correcting power to contribute to distance correction, the power distribution increasing at a first rate between the apex and the design point;

the power distribution having a second power outside of the design point, the power distribution outside of the design point sufficient to create blur surrounding images on the user's fovea, the power distribution increasing at a second rate greater than the first rate immediately outside of the design point;

diagnosing a user with myopia; and

implementing the treatment lens as a means to reduce progression of myopia, the first power and power distribution structured to increase depth of focus and to reduce accommodative lag stress for the user of the lens over time and a period of generally all day wear to reduce the progression of myopia.

8. A kit of ophthalmic lenses for treating myopia, comprising:

providing lenses each having a central region about the apex of the lens that yields clear distance vision, and an optical blur region immediately surrounding the central region that yields an unfocused optical image such that the lens provides an induced aperture and an increased depth of focus; and

providing instructions for use of the lenses, according to a protocol designed to reduce myopic progression in the eye.

9. The kit of claim 8 wherein the protocol enables relief or reduction of accommodative stress in the eye.

10. The kit of claim 9 wherein said depth of focus is at least +0.25 to +1.00 diopters.

11. A kit, according to claim 9, and wherein: the user has a reduction in accommodative lag of +0.25 to +1.00 diopters.

12. The kit of claim 8 wherein:

said blur region comprises an optical surface creating a power distribution that varies smoothly from an apical power at the design point through rapidly changing power surrounding said apical power.

13. A method of designing a refractive lens for reducing myopic progression, comprising:

determining a person's unaided eye depth of focus;

defining a treatment lens having a continuous power distribution configured to increase the person's depth of focus when in use; and

providing instructions for applying said lens according to a protocol designed to reduce myopic progression in the eye.

14. The method of claim 13 wherein said protocol includes having an individual wear said lens over an extended period of consecutive days but not necessarily when sleeping.

15. A kit using ophthalmic lenses comprising:

providing a pair of ophthalmic lenses each having an apex having distance vision correcting power;

a power distribution increasing smoothly radially outward from the apex to a peak power rise more positive than the distance vision correcting power;

wherein the power distribution has a first power at a design point between the vision-correcting power and the peak power rise, the power of the distribution between the apex and design point being sufficiently like in power to the distance vision correcting power to contribute to distance correction;

the first power being sufficient to create blur outside the design point;

the power distribution outside the design point being sufficient to create a blur surrounding images on the user's fovea; and

providing instructions for applying said lens according to a protocol designed to reduce myopic progression in the eye.

CLAIMS

1. A method of designing a refractive spectacle lens for reducing myopic progression, comprising:

determining a person's unaided eye depth of focus;

defining a treatment lens having a smooth and continuous power distribution configured to increase the person's depth of focus when in use,

the power distribution having a first power at a design point (DP) between the vision-correcting power and the peak power rise, the power distribution between the apex and design point sufficiently like in power to the distance vision correcting power to contribute to distance correction, the power distribution increasing at a first rate between the apex and the design point;

the power distribution having a second power outside of the design point, the power distribution outside of the design point sufficient to create blur surrounding images on the user's fovea, the power distribution increasing at a second rate greater than the first rate immediately outside of the design point;

diagnosing a user with myopia; and

implementing the treatment lens as a means to reduce progression of myopia, the first power and power distribution structured to increase depth of focus and to reduce accommodative lag stress for the user of the lens over time and a period of generally all day wear to reduce the progression of myopia.

2. A method of designing a refractive lens for reducing myopic progression, comprising:

determining a person's unaided eye depth of focus;

defining a treatment lens having a continuous power distribution configured to increase the person's depth of focus when in use; and

providing instructions for applying said lens to reduce myopic progression.

3. The method of claim 2 wherein said step of providing instructions includes having an individual wear said lens over an extended period of consecutive days but not necessarily when sleeping.