

CLAIMS

1. A computer-implemented method for treating myopia of an individual comprising:
 - receiving, via an interface at a computer, data relating to refractive change in a prior pre-determined time period for the individual from a reference timepoint;
 - receiving, via the interface, data representing an age of the individual and data representing a current axial length value of the eye as measured at the reference timepoint;
 - predicting, by said processor, a future axial elongation of the eye as a function of the age of the individual, the current axial length value of the eye as measured at the reference timepoint, and said refractive change in the prior pre-determined time period, wherein said axial elongation of the eye is a value ΔAL , said method comprising calculating ΔAL according to:
$$\Delta AL = a \times \text{RECIPY (D)} - b \times \text{age} + c \times \text{axial length} - d$$
 - wherein a, b and c are respective coefficients; d is a constant value in mm, RECIPY represents said refractive change in Diopters (D), age represents an individual's age in years, and axial length is in mm;
 - generating, an output indication of said predicted future axial elongation of the eye via the interface, and
 - using said output indication to select a myopia control treatment for said individual.
2. The computer- implemented method of Claim 1, wherein said myopia control treatment comprises a myopia control ophthalmic lens, an orthokeratology or a pharmaceutical treatment regime.
3. The computer- implemented method of Claim 2, wherein the myopia control ophthalmic lens comprises a myopia control contact lens.
4. The computer- implemented method of Claim 1, further comprising:

comparing, by said processor, the calculated future axial elongation of the eye against a predetermined threshold value; and

said processor identifying an individual to be a fast progressor when said calculated axial elongation of the eye is greater than said predetermined threshold value.

5. The computer-implemented method of Claim 4, wherein said predetermined threshold value is about 0.301mm/yr.

6. The computer- implemented method of Claim 1, wherein $a = -0.12051 \pm 0.05162$ (mm/D); coefficient value $b = 0.03954 \pm 0.00323$ (mm/yr); coefficient value $c = 0.036819 \pm 0.001098$; and value $d = 0.35111(\text{mm}) \pm 0.025809$.

7. A computer system for treating myopia of an individual comprising:

a memory for storing instructions; and

a processor coupled to the memory, said processor running said stored instructions to:

receive, via an interface at the server, data relating to refractive change in a prior pre-determined time period for the individual from a reference timepoint;

receive, via the interface, data representing an age of the individual and data representing a current axial length value of the eye as measured at the reference timepoint;

predict a future axial elongation of the eye as a function of the age of the individual, the current axial length value of the eye as measured at the reference timepoint, and said refractive change in the prior pre-determined time period, wherein said axial elongation of the eye is a value ΔAL , said processor running further instructions to calculate ΔAL according to:

$$\Delta AL = a \times \text{RECIPY (D)} - b \times \text{age} + c \times \text{axial length} - d$$

wherein a , b and c are respective coefficients; d is a constant

value in mm, RECIPY represents said refractive change in Diopters, age represents an individual's age in years, and axial length is in mm;

generate an output indication of said predicted future axial elongation of the eye via the interface, and

use said output indication to select a myopia control treatment for said individual.

8. The computer system of Claim 7, wherein said myopia control treatment comprises one or more of: a myopia control ophthalmic lens, a myopia control contact lens, and a soft contact lens, an orthokeratology or a pharmaceutical treatment regime.

9. The computer system of Claim 7, wherein said processor runs further instructions to:

compare the calculated axial elongation of the eye against a predetermined threshold value; and

identify an individual to be a fast progressor when said calculated axial elongation of the eye is greater than said predetermined threshold value; and

select a myopia control treatment for said fast progressor.

10. The computer system of Claim 7, wherein $a = -0.12051 \pm 0.05162$ (mm/D); coefficient value $b = 0.03954 \pm 0.00323$ (mm/yr); coefficient value $c = 0.036819 \pm 0.001098$; and value $d = 0.35111$ (mm) ± 0.025809 .

11. A computer program product for treating myopia of an individual, the computer program product comprising a non-transitory computer readable storage medium having program instructions embodied therewith, the program instructions executable by a processor to perform a method comprising:

receiving, via an interface at a computer, data relating to refractive change in a prior pre-determined time period for the individual from a reference timepoint;

receiving, via the interface, data representing an age of the individual and data

representing a current axial length value of the eye as measured at the reference timepoint;

predicting, by said processor, a future axial elongation of the eye as a function of the age of the individual, the current axial length value of the eye as measured at the reference timepoint, and said refractive change in the prior pre-determined time period, wherein said axial elongation of the eye is a value ΔAL , said method comprising calculating ΔAL according to:

$$\Delta AL = a \times \text{RECIPY (D)} - b \times \text{age} + c \times \text{axial length} - d$$

wherein a , b and c are respective coefficients; d is a constant value in mm, RECIPY represents said refractive change in Diopters, age represents an individual's age in years, and axial length is in mm;

generating, an output indication of said predicted future axial elongation of the eye via the interface, and

using said output indication to select a myopia control treatment for said individual.

12. The computer program product of Claim 11, wherein said myopia control treatment comprises a myopia control ophthalmic lens, an orthokeratology or a pharmaceutical treatment regime.

13. The computer program product of Claim 12, wherein the myopia control ophthalmic lens comprises a myopia control contact lens.

14. The computer program product of Claim 11, wherein $a = -0.12051 \pm 0.05162$ (mm/D); coefficient value $b = 0.03954 \pm 0.00323$ (mm/yr); coefficient value $c = 0.036819 \pm 0.001098$; and value $d = 0.35111(\text{mm}) \pm 0.025809$.