Claims

1. An automated method for vision assessment of a subject, the method comprising:

determining a set of test patterns for the subject based on a preliminary assessment of an eye of the subject, the preliminary assessment comprising fundus analysis to estimate vision impairment of the eye;

displaying the set of test patterns sequentially to the subject;

collecting data on the subject's gaze in response to each test pattern displayed to the subject, the collecting data comprising tracking the subject's gaze shifting in response to each test pattern; and

assessing vision functionality of the subject based on the collected gaze data associated with the shifting of the subject's gaze.

2. The method according to claim 1, further comprising calibrating the eye before the preliminary assessment of the eye.

3. The method according to claim 1, wherein the fundus analysis comprises:

imaging a fundus of the eye; and

analyzing the fundus to detect damage and/or anomalies in the eye.

4. The method according to claim 1, wherein the set of test patterns is determined from a pattern database of predefined test patterns for assessing vision functionality/impairment.

5. The method according to claim 1, wherein assessing the vision functionality of the subject comprises determining time taken for the shifting of the subject's gaze.

6. The method according to claim 1, wherein each test pattern is displayed according to a current position of the subject's gaze.

7. The method according to claim 1, wherein assessing the vision functionality of the subject comprises comparing the gaze data with a subject database.

8. The method according to claim 1, wherein the subject's head is maintained in a fixed position during the displaying of the test patterns.

9. The method according to claim 1, the subject's gaze shifts from a base position to a target position of each test pattern.

10. The method according to claim 9, wherein the target position of a test pattern is the base position of a succeeding test pattern.

11. A system for vision assessment of a subject, the system comprising a processor configured for performing steps comprising:

determining a set of test patterns for the subject based on a preliminary assessment of an eye of the subject, the preliminary assessment comprising fundus analysis to estimate vision impairment of the eye;

displaying the set of test patterns sequentially to the subject;

collecting data on the subject's gaze in response to each test pattern displayed to the subject, the collecting data comprising tracking the subject's gaze shifting in response to each test pattern; and

assessing vision functionality of the subject based on the collected gaze data associated with the shifting of the subject's gaze.

12. The system according to claim 11, the steps further comprising calibrating the eye before the preliminary assessment of the eye.

13. The system according to claim 11, wherein the fundus analysis comprises:

imaging a fundus of the eye; and

analyzing the fundus to detect damage and/or anomalies in the eye.

14. The system according to claim 11, wherein the set of test patterns is determined from a pattern database of predefined test patterns for assessing vision functionality / impairment.

15. The system according to claim 11, wherein assessing the vision functionality of the subject comprises determining time taken for the shifting of the subject's gaze.

16. The system according to claim 11, wherein each test pattern is displayed according to a current position of the subject's gaze.

17. The system according to claim 11, wherein assessing the vision functionality of the subject comprises comparing the gaze data with a subject database.

18. The system according to claim 11, wherein the subject's head is maintained in a fixed position during the displaying of the test patterns.

19. The system according to claim 11, wherein the subject's gaze shifts from a base position to a target position of each test pattern.

20. The system according to claim 19, wherein the target position of a test pattern is the base position of a succeeding test pattern.