CLAIMS

1. An ocular biomechanical property (OBP) measuring and monitoring method comprising placing a contact lens presenting an inner surface and an outer surface and a sensing unit on an eye of a user, said sensing unit being united with said contact lens such that it is applied against the eye of the user for sensing at least a first OBP and a second OBP of said eye when said contact lens is worn by said user, simultaneously or consecutively measuring the first and second OBPs with said sensing unit and transmitting the first and second OBPs to a CPU and determining using said CPU at least one new biomarker based on a combination between at least the first and second OBPs.

2. The OBP measuring and monitoring method according to claim 1 characterized in that the sensing unit comprises a single sensor capable of measuring at least two different OBPs.

3. The OBP measuring and monitoring method according to claim 1, characterized in that the sensing unit comprises at least two single sensors each capable of measuring a single OBP.

4. The OBP measuring and monitoring method according to claim 3, characterized in that the at least two single sensors are each capable of measuring a single OBP different from each other.

5. The OBP measuring and monitoring method according to claim 1, characterized in that the first OBP is an intraocular pressure and the second OBP is an eye's temperature or an eye's dimensional variation.

6. The OBP measuring and monitoring method according to claim 5, wherein the sensing unit comprises an eye's dimensional variation sensor as one or several active strain gauge presenting a circular or arc shape and is situated in an outer portion around the inner portion of said contact lens.

7. The OBP measuring and monitoring method according to claim 6, wherein said strain gauge is a continuous longitudinal element made of a resistive material, such as a metal or an alloy.

8. The OBP measuring and monitoring method according to claim 6, wherein the eye's dimensional variation sensor comprises four gauges in a Wheatstone bridge configuration.

9. The OBP measuring and monitoring method according to claim 1, characterized in that the sensing unit comprises a direct pressure sensor.

10. The OBP measuring and monitoring method according to claim 9, characterized in that the contact lens is a soft contact lens comprising an inner portion and an outer portion, said inner portion being more rigid than said outer portion.

11. The OBP measuring and monitoring method according to claim 10, characterized in that the direct pressure sensor is located in said inner portion.

12. The OBP measuring and monitoring method according to claim 10, wherein the inner portion is adapted to at least partially rigidify a central portion of the inner surface of said contact lens so as to maintain said rigidified inner surface with a curvature radius adapted to flatten at least a portion of the eye surface in contact with the direct pressure sensor so as to reach a pressure equilibrium around the direct pressure sensor when said contact lens is worn by said user.

13. The OBP measuring and monitoring method according to claim 10, characterized in that the inner portion has a general shape similar to a meniscus lens.

14. The OBP measuring and monitoring method according to claim 10, characterized in that the inner portion is smaller in dimension compared to the outer portion and is centered in the contact lens.

15. The OBP measuring and monitoring method according to claim 8, characterized in that the inner portion comprises a rigid insert.

16. The OBP measuring and monitoring method according to claim 15, characterized in that the rigid insert comprises a plurality of through holes.

17. OBP measuring and monitoring device according to claim 15, characterized in that the rigid insert is made of one or more polymers, biopolymers, ceramics, glasses, metals and RGP and/or an outer portion of said contact lens is made of one or more hydrogels, silicones or a combination thereof.

18. The OBP measuring and monitoring method according to claim 10, characterized in that any one of the inner portion and the outer portion of said contact lens is made of a material having a tunable stiffness or a stiffness gradient.

19. The OBP measuring and monitoring method according to claim 9, characterized in that the pressure sensor is in direct contact or in indirect contact with the eye of the user and is located within a cavity formed in an inner concave side of the rigid insert, and wherein the cavity is filled with a pressure transmitting filler material that covers the pressure sensor such that a layer of the filler material is located between the pressure sensor and the inner surface of the contact lens.

20. The OBP measuring and monitoring method according to claim 19, characterized in that the filler material is a material softer than the inner portion and/or the outer portion or is the same material as the material of the outer portion.

21. The OBP measuring and monitoring method according to claim 19 characterized in that the cavity is formed in the inner portion.

22. The OBP measuring and monitoring method according to claim 19, characterized in that the inner surface of the contact lens beneath the cavity presents a surface softness softer or similar than the rest of the inner surface beneath the inner portion.

23. The OBP measuring and monitoring method according to claim 1, characterized in that the sensing unit comprises a plurality of sensors adapted to measure the same OBP.