UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH
Servei de Gestió de la Innovació

Reference number
MKT2021/0178_G

ASSESSMENT OF ACCOMMODATION FROM REAL-TIME MONITORING OF THE REFRACTIVE STATE OF THE EYE

A new method and computer program for characterizing ocular accommodation have been developed. The method comprises measuring spherical refractive errors of an eye for different additional optical powers with respect to reference refraction: calculating the behavior of an accommodation signal of the eye and analyzing the behavior of the accommodation signal.

Partners to further develop the system and/or to establish commercial agreements along with technical cooperation are sought.

The Challenge

Accommodation, that is, the capacity of the eye to focus at different distances, must be completely avoided during subjective refraction to find the right combination of lenses that compensates for the ocular ametropia (myopia, hypermetropia, and astigmatism). In children and young adults, control of accommodation is a challenging task due to their involuntary tendency to accommodate. Accommodation is usually controlled by instilling cyclopegic drops to temporally paralyze the ciliary muscle (however, its effects may persist beyond the test by limiting the visual capacity, which might be uncomfortable for the patient) or by placing positive (fogging) lenses in front of the eye to relax it. However, there is no certainty about the true accommodation state of the eye when the fogging

The Technology

The Centre for Sensors Instruments and Systems Development (CD6) of the UPC has developed a technology that allows retrieving the accommodation response and determining by objective means when accommodation activates during subjective refraction. The technology is composed by an instrument that measures, in real-time, the accommodation state and may be coupled to commercial phoropters, which are the instruments used by optometrist and ophthalmologists to perform the subjective refraction. The information retrieved by the system may be given to clinicians to ensure the non-accommodation for the subjective refraction found.

Innovative advantages

- Retrieving of the accommodation response during clinical procedures.
- Automatic detection of the activation of accommodation.
- The system may be coupled to instruments currently used in clinical practice.
- Supporting tool to validate subjective refraction procedures.

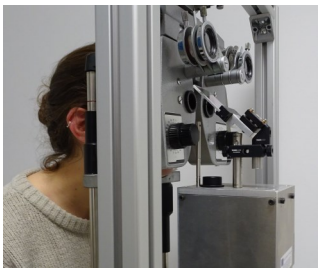
Current stage of development

The technology has been proven in a relevant environment (technology readiness level TRL 5). The methodology for automatic characterization of the accommodation response is being validated.

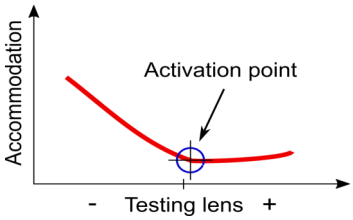
Applications and Target Market

Technology suitable for providing estimations of the refractive state of the eye and validating eye tests in clinical practice of optometrist and ophthalmologist.

Target market: manufacturers of optometric instrumentation.



Instrument coupled to a phoropter



Typical accommodation response during subjective refraction

Business Opportunity

Technology available for licensing with technical cooperation

Patent Status

Priority application

Contact

Sonia Touriño, PhD
Licensing Manager
T. + 34 934137623
Sonia.tourino@upc.edu

See more technologies at

https://www.upc.edu/innovacio/ca/oficina-patents/technology-offers

HEALTH TECHNOLOGIES