IMaging-based CUSTOMised EYE diagnostics

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D8.3. Press releases and media coverage

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Version	**Date**	**Author**	**Comment**
1.0	19/08/2020	Elena Rico	
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Index

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1. Executive Summary

This document summarizes the appearance of IMCUSTOMEYE project in media such as institutional press releases, national newspapers, magazines, websites and blog entries over the entire duration of the project. The objective of press and media coverage is to support the dissemination of IMCUSTOMEYE, by attracting the attention to project progress and achievements, ultimately to contribute to the impact of the project.

The present deliverable, as part of the Dissemination Work Package (WP8), targets an audience ranging from the scientific community to end users and general public, facilitating the dissemination efforts of the IMCUSTOMEYE project. Dissemination activities are coordinated by CSIC.

The dissemination of the results aligns with the Consortium's commitment to knowledge transfer, to maximize the impact of research, and to involved different stakeholders (scientific community, companies, clinicians, general society and patients). To accomplish these goals, a broad spectrum of channels is used in order to effectively reach the targets for dissemination and to maximize the visibility of the project. This deliverable report presents an overview of the press and media coverage.

2. Target Groups

Press Releases and media coverage have targeted multiple audiences:

- Interested stakeholders, industry associations, policy makers, market players, etc.
- Media (print and online) focusing on R&D, technology development, innovation, etc.
- Project sponsors and investors.
- Members of the academia and research community.
- The European Commission and Institutions at European, national and regional level which have been targeted to share the project results.
- End-users and general public.

3. Press releases

Press releases are the main communication channel with journalist and editors. A single press release acts as news multiplier, stimulating the interest of the media (press, scientific or clinical magazines, national and/or international broadcasting services) and reaching a wider audience. In many cases, media dissemination will occur at the national

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level, although special attention will be made to seek broadcasting by Europe-wide media sources.

The members of the Consortium have agreed to pursue press releases upon acceptance of manuscripts in high impact journals, and other relevant milestones including the kick-off of clinical studies on patients, with Each partner being responsible for disseminating via press releases its own important achievements within the project, and coordinating actions to optimize efforts and multiply the outputs. Academic and clinical partners have already contacted the Press Offices of their own institutions to promote press releases, and drawn strategies for communication with specialized magazines, capitalizing on contacts with prestigious academic and clinical societies and key opinion leaders.

The First press release on IMCUSTOMEYE project was issued by Consejo Superior de Investigaciones Científicas (CSIC) Press Office on May 2020 (Annex 1), introducing the project to the general public. The press release also includes a description of the consortium of academic experts, ophthalmic clinics and companies, the objectives of the project, its innovative method and an overview on corneal biomechanics, and quotes from Principal Investigator Prof. Susana Marcos and postdoctoral researchers from Visual Optics and Biophotonics Lab (CSIC) Judith Birkenfeld and Andrea Curatolo. The press release was sent nationally and internationally using standard channels, and among others, CSIC twitter account (reaching almost 1 million followers), IMCUSTOMEYE twitter account, partners individual, lab and institutional twitter accounts and press offices.

4. Media coverage

Press releases have motivated articles in the Spanish press and health and biotechnology magazines (Consalud, Infosalus, SaludaDiario, Biotech-Spain, La Vanguardia, etc…)

- **ConSalud**. El CSIC desarrolla nuevas técnicas de imagen para el tratamiento de patologías oculares a la carta https://www.consalud.es/profesionales/csic-desarrolla-tecnicas-imagen-tratamiento-patologias-oculares-carta_79858_102.html

- **Salud Diario**. Científicos del CSIC desarrollan nuevas técnicas de imagen para el tratamiento de patologías oculares a la carta https://www.saludadiario.es/investigacion/cientificos-del-csic-desarrollan-nuevas-tecnicas-de-imagen-para-el-tratamiento-de-patologias-oculares-a-la-carta

- **La Vanguardia**. Nuevas técnicas de imagen permiten tratar patologías oculares "a la carta"

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https://www.lavanguardia.com/vida/20200522/481321701805/nuevas-tecnicas-de-imagen-permiten-tratar-patologias-oculares-a-la-carta.html

- **El Diario**. Nuevas técnicas de imagen permiten tratar patologías oculares "a la carta" https://www.eldiario.es/sociedad/nuevas-tecnicas-permiten-patologias-oculares_1_5982586.html

- **NCYT Noticias de la Ciencia y Tecnología**. Nuevas técnicas de imagen para el tratamiento de patologías oculares a la carta https://noticiasdelaciencia.com/art/38186/nuevas-tecnicas-de-imagen-para-el-tratamiento-de-patologias-oculares-a-la-carta

- **Biotech Spain**. Científicos del CSIC desarrollan nuevas técnicas de imagen para el tratamiento de patologías oculares a la carta http://biotech-spain.com/en/articles/cient-ficos-del-csic-desarrollan-nuevas-t-cnicas-de-imagen-para-el-tratamiento-de-patolog-as-oculares-a-la-carta/

The project was also promoted through partner's websites and blogs and other stakeholders (i.e. representing a key vector for the dissemination of the project internationally):

- **Photonics 21** https://www.photonics21.org/ppp-projects/workgroup-3/Imcustomeye.php

- **2EyesVision Website** https://www.2eyesvision.com/es/imcustomeye-project-kick-off/

- **Instituto Oftalmológico Fernández-Vega Website** https://fernandez-vega.com/proyecto-imcustomeye-imaging-based-customised-eye-diagnostics-779960/

- **National University of Ireland Galway Website** http://tomi.nuigalway.ie/tomi-physics/currentresearch/imcustomeye/

- **Alejandra Consejo (Polish Academy of Science postdoctoral researcher) Blog** http://alejandraconsejo.blogspot.com/2018/12/second-postdoc-optics-in-pob.html

- **VioBio Lab (CSIC) Blog** https://viobiolabs.wordpress.com/2018/03/09/imcustomeye-celebrates-kick-off-meeting-in-madrid/

5. IMCUSTOMEYE Website

The IMCUSTOMEYE project website (http://www.imcustomeye.eu/) was launched on April 2018. The project website was set up by the coordinator (CSIC) who also

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undertakes its maintenance. The website is the backbone of the project's dissemination strategy, working as a vehicle for publicizing a wide range of information about the project, including its objectives, purpose, funding, partners, results and news.

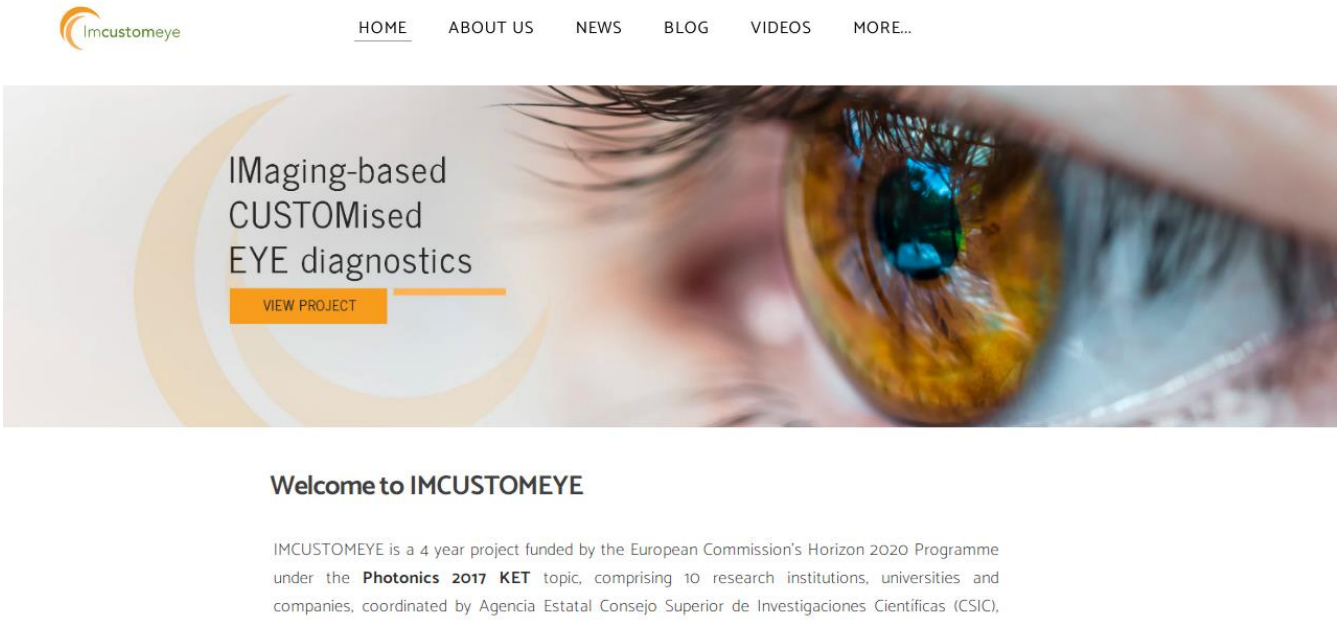
The objectives achieved through the creation of the project website are:

- To provide information about the project to stakeholders and general public, sharing information about partners, objectives and activities.
- To attract additional interested stakeholders.
- To share the project progress and results.
- To increase the general's public knowledge on visual optics and, specifically, corneal biomechanics.

The project coordinator is responsible for the regular update of the website, as well as coordination of top level communication activities of the Project and analysis of their impact. The work package leaders provide content for the website, in the form of announcements, new publications, or active materials, which is received by email or via SharePoint.

The IMCUSTOMEYE website has undergone a number of enhancements, including the website layout which has been recently refreshed and augmented with improved imagery to increase the appeal and navigability of the site. A screenshot of the new home page is provided in Figure 1.

Figure 1. New IMCUSTOMEYE homepage layout



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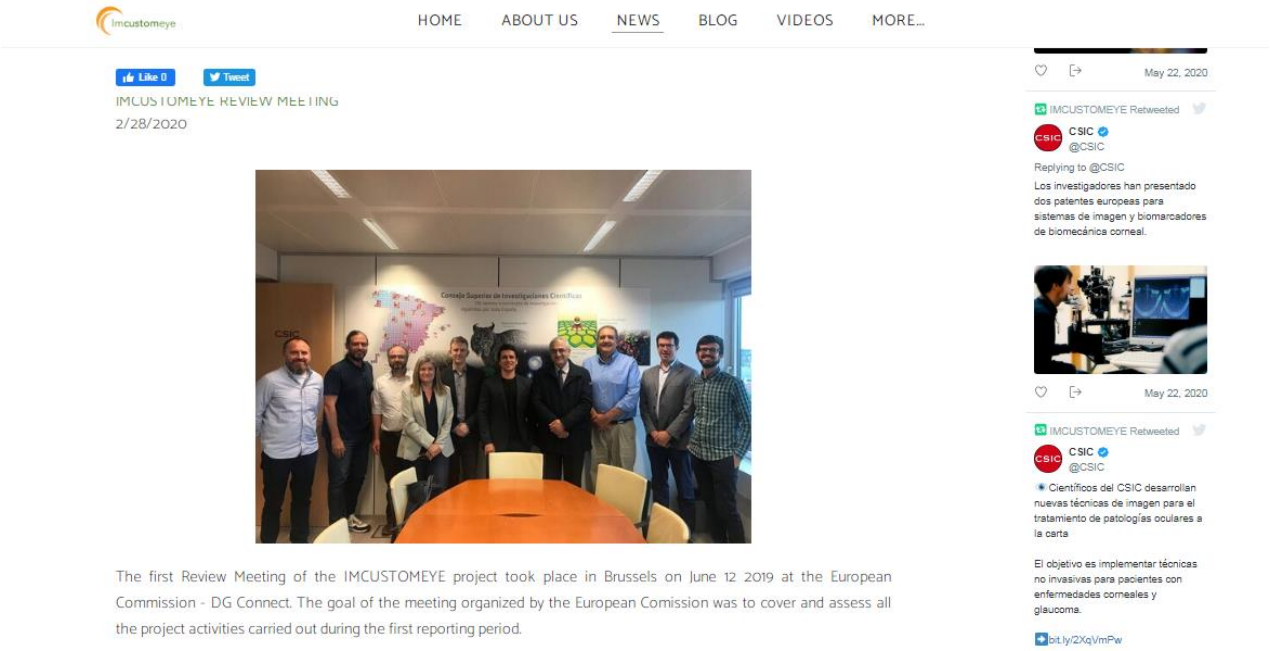
The IMCUSTOMEYE website traffic continues to increase month by month with more than 2500 visits in the last year (+2417% increase).

5.1 News Section

The website includes a News section where all the information about the project is updated for the general public (meetings, participation in congresses, articles publication, awards, etc.)

Figure 2. IMCUSTOMEYE News Section



5.2 IMCUSTOMEYE Blog

Among the new features on the website is the IMCUSTOMEYE Blog (http://www.imcustomeye.eu/blog) launched on February 2020 for analysis and insight into relevant topics related to the project. The aim of this blog is to raise awareness on research about visual optics and ophthalmology, focusing on corneal biomechanics, among the end user and general public but also a more specialized target audience of stakeholders. This year 3 posts have been published on the blog.

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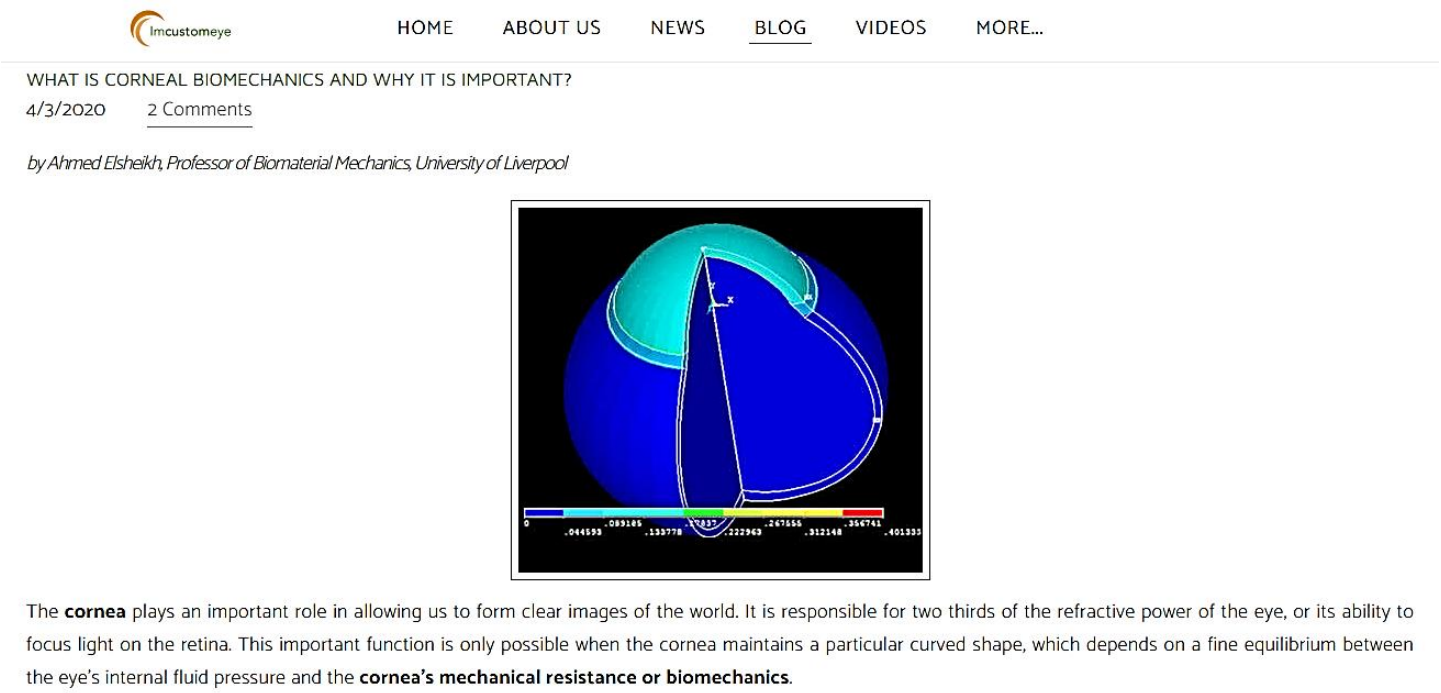
Figure 3. IMCUSTOMEYE Blog



5.3 Newsletters

Project Newsletters enable the consortium to update the project community with latest project activities and results. As already mentioned in the Dissemination Plan, the project newsletters are used to announce the project status, develop a profile, give regular updates on its progress and developments.

IMCUSTOMEYE publish a bi-monthly newsletter in the project website (http://www.imcustomeye.eu/newsletters.html)

An illustration of several of the newsletters is provided in **Figure 4**.

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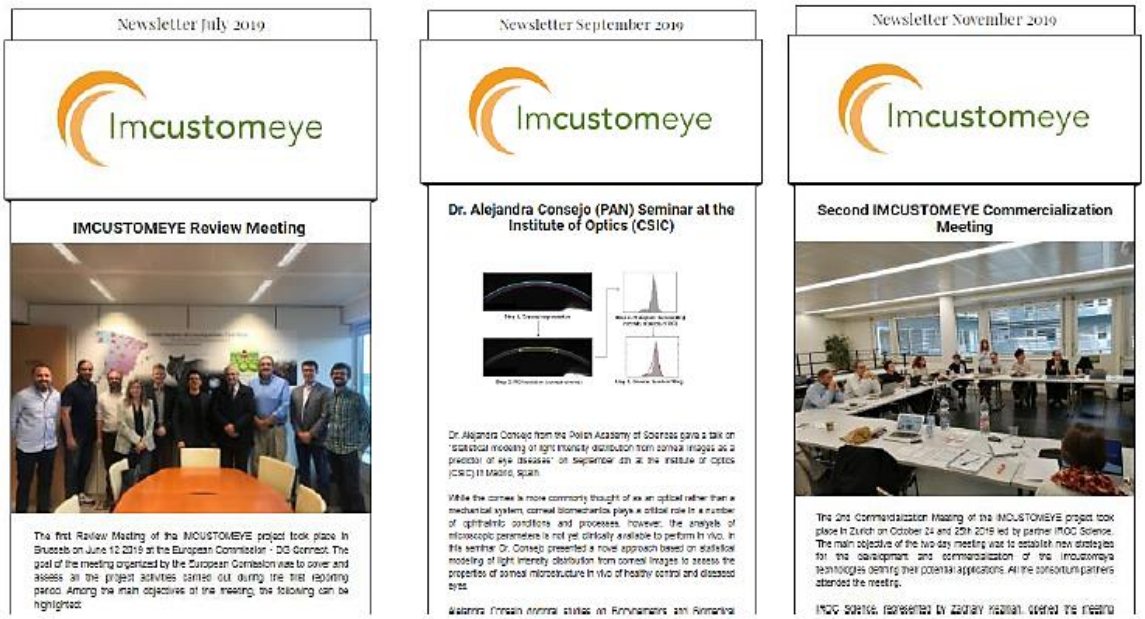
Figure 4. Project Newsletters



6. Scientific publications and articles

External dissemination is designed to effectively communicate with parties outside the consortium. Considering the strong scientific record of the participants and the nature and novelty of the research field, it is not surprising that a series of milestone results have already been prepared for publication in peered reviewed journals (both high impact factor and specific to the field). Publication in open access journals and giving access to institutional repositories is favored by partners to facilitate immediate spread of knowledge.

Here is the list of the latest scientific publications acknowledging the IMCUSTOMEYE project:

1. Maczynska E, Karnowski K, Szulzycki K, Malinowska M, Dolezyczek H, Cichanski A, Wojtkowski M Et al. Assessment of the influence of viscoelasticity of cornea in animal ex vivo model using air-puff optical coherence tomography and corneal hysteresis. *J. Biophotonics*. e201800154 (2018).

2. S. Alexandrov, P.M. McNamara, N. Das, Y. Zhou, G. Lynch, J. Hogan, M. Leahy. Spatial frequency domain correlation mapping optical coherence tomography for nanoscale structural characterization. *Applied Physics Letters 115*:12 (2019)

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3. A. Consejo, K. Gławdecka, K. Karnowski, J. Solarski, J.J. Rozema, M. Wojtkowski, D.R. Iskander. Corneal properties of keratoconus based on Scheimpflug light intensity distribution. *Investigative Ophthalmology and Visual Science 60*: 3197-3203 (2019)

4. E. Mączyńska, K. Karnowski, K. Szulżycki, M. Malinowska, H. Doleżyczek, A. Cichanski, M. Wojtkowski, B. Kałużny, I. Grulkowski. Assessment of the influence of viscoelasticity of cornea in animal ex vivo model using air-puff optical coherence tomography and corneal hysteresis". *Journal of Biophotonics 12/2* (2019)

5. A. Jiménez-Villar, E. Mączyńska, A. Cichański, M. Wojtkowski, B. J. Kałużny, and I. Grulkowski. High-speed OCT-based ocular biometer combined with an air-puff system for determination of induced retraction-free eye dynamics. *Biomedical Optics Express*, Vol.10 Isse 7, pp. 3663-3680 (2019)

6. S. Reisdorf. Artificial Intelligence for the Development of Screening Parameters in the Field of Corneal Biomechanics. *Klin Monbl Augenheilkd 236*(12): 1423-1427 (2019)

7. A. Consejo, J. Solarski, K. Karnowski, J.J. Rozema, M. Wojtkowski, D.R. Iskander. Keratoconus detection based on a single Scheimpflug image. *Translational Vision Science and Technology 9*(7):36 (2020)

8. A. Consejo, D. Alonso-Caneiro, M. Wojtkowski, S.J. Vincent. Corneal tissue properties following scleral lens wear using Scheimpflug imaging. *Ophthalmic and Physiological Optics* (2020)

9. J.A. Germann, E. Martínez-Enríquez, M.C. Martínez-García, I.E. Kochevar, S. Marcos. Corneal Collagen Ordering After In Vivo Rose Bengal and Riboflavin Cross-Linking. *Invest. Ophthalmol. Vis. Sci. 61*(3):28 (2020).

10. Y. Zhou, S. Alexandrov, A. Nolan, N. Das, R. Dey and M. Leahy, "Non-invasive detection of nanoscale structural changes in cornea associated with corneal cross-linking treatment". *Journal of Biophotonics 13* (6) e201960234 (2020)

11. C. Lal, S. Alexandrov, S. Rani, Y. Zhou, T. Ritter, M. Leahy, Nanosensitive optical coherence tomography to assess wound healing within the cornea. *Biomed. Opt. Express 11* (7) 3407-3422 (2020)

12. Eliasy A, Abass A, Lopes BT, Vinciguerra R, Zhang H, Vinciguerra P, Ambrósio Jr R, Roberts CJ, Elsheikh A. Characterization of cone size and centre in keratoconic corneas. *J. R. Soc. Interface 17*: 20200271. (2020).

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13. Abass A, Roberts C, Lopes B, Eliasy A, Vinciguerra R, Ambrósio R, Vinciguerra P, Elsheikh A. Can the Corvis ST Estimate Corneal Viscoelasticity?. *J Refract Surg 36*: 346-348 (2020).

14. Herber R, Vinciguerra R, Lopes B, et al. Repeatability and reproducibility of corneal deformation response parameters of dynamic ultra-high-speed Scheimpflug imaging in keratoconus. *J Cataract Refract Surg 46*(1):86-94 (2020)

15. Salomão MQ, Hofling-Lima AL, Gomes Esporcatte LP, Lopes B, Vinciguerra R, Vinciguerra P, Bühren J, Sena N Jr, Luz Hilgert GS, Ambrósio R Jr. The Role of Corneal Biomechanics for the Evaluation of Ectasia Patients. *Int J Environ Res Public Health 23*;17(6):2113 (2020)

16. A. Curatolo, J. Birkenfeld, E. Martinez-Enriquez. J. Germann, G. Muralidharan, J. Palaci, D. Pascual, A. Eliasy, A. Abbass, J. Solarski, K. Karnowski, M. Wojtowski, A. ElSheikh and S. Marcos. Multi-meridian corneal imaging of air-puff, induced deformation for improved detection of biomechanical abnormalities. *Biomedical Optics Express* (in press)

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CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS

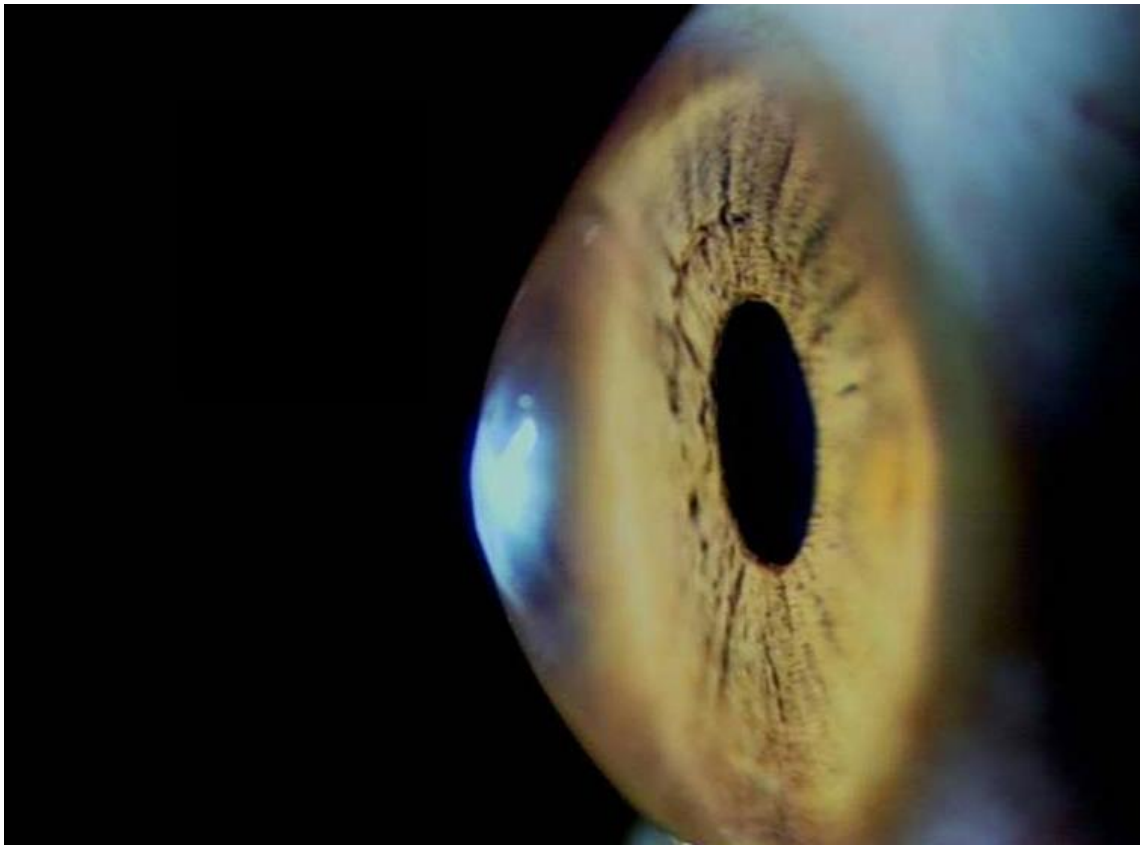
Nota de prensa

CSIC comunicación
Tfnos.: 91 568 14 72 / 618 409 565
g.prensa@csic.es
www.csic.es

Madrid, viernes 22 de mayo de 2020

Científicos del CSIC desarrollan nuevas técnicas de imagen para el tratamiento de patologías oculares a la carta

- **El objetivo es implementar técnicas no invasivas para pacientes con enfermedades corneales y glaucoma**
- **Los investigadores presentan dos patentes europeas para sistemas de imagen y biomarcadores de biomecánica corneal**



La córnea, la lente más externa del ojo, se debilita con el paso del tiempo./ VioBio Lab-CSIC

Un consorcio europeo de expertos académicos en imagen del ojo y biomecánica ocular, clínicas oftalmológicas y empresas, liderado por científicos del Consejo Superior de Investigaciones Científicas (CSIC), trabaja en desarrollar nuevas técnicas de imagen para

CSIC comunicación
Tel.: 91 568 14 77
g.prensa@csic.es
www.csic.es/prensa

diagnosticar y tratar patologías oculares de forma personalizada. El proyecto, denominado IMCUSTOMEYE y financiado por el programa Horizonte 2020 de la Comisión Europea, tiene por objetivo la implementación de técnicas no invasivas para los pacientes con enfermedades corneales y glaucoma.

La córnea es la lente más externa del ojo. Junto con el cristalino proyecta las imágenes del mundo exterior en la retina. La integridad estructural de esta cúpula transparente se basa en fibras de colágeno finamente intercaladas. Su forma regular es, por lo tanto, el resultado de su rigidez biomecánica. En cada persona, la córnea puede reaccionar de manera diferente a los estímulos mecánicos.

Existen afecciones oculares en las que la córnea se altera quirúrgicamente, bien tallándola con láser o mediante implantes corneales o incisiones. Es el caso de los tratamientos frente a la miopía, que afecta al 30% de la población en los países occidentales y al 90% en algunas poblaciones asiáticas; la presbicia, que es la pérdida de capacidad de enfoque dinámico que afecta al 100% de las personas mayores de 45 años, y la catarata, que supone una pérdida de transparencia, y que sufre el 50% de la población mayor de 65 años.

En varias patologías, como en el caso del queratocono, que afecta al 1% de la población, la córnea se debilita localmente, lo que resulta en abultamiento y distorsión de la visión. El tratamiento del queratocono requiere implantar una estructura de soporte dentro de la córnea (segmentos del anillo intracorneal) o endurecerla infundiendo un tinte e irradiando con luz (una técnica llamada *cross-linking*).

“Si bien todos estos tratamientos dependen en mayor o menor medida de la respuesta mecánica de la córnea, hoy en día no existe un instrumento clínico que detecte anomalías mecánicas corneales o que pueda ayudar a predecir la respuesta mecánica a la cirugía, y a mejorar el diagnóstico de otras enfermedades como el glaucoma”, explica la investigadora del CSIC **Susana Marcos**, que dirige el grupo que coordina IMCUSTOMEYE en el Instituto de Óptica Daza Valdés del CSIC.

Presentadas dos patentes

Los investigadores del CSIC han desarrollado ya dos prototipos de instrumentación que han presentado a la Oficina Europea de Patentes. El primero de los instrumentos es un sistema de imagen de tomografía de coherencia óptica que mide la deformación corneal a un pulso de aire en varios planos de sección ocular, llamados meridianos, “un sistema que ya hemos demostrado en sujetos en vivo”, apunta **Andrea Curatolo**, investigador postdoctoral en el proyecto.

El segundo de los instrumentos es un sistema de vibrometría que excita resonancias en la córnea mediante un estímulo acústico. “Su utilidad reside en obtener simultáneamente un marcador de anomalías biomecánicas en la córnea y la presión intraocular”, aclara **Judith Birkenfeld**, investigadora postdoctoral en la iniciativa.

La Vicepresidencia Adjunta de Transferencia de Conocimiento del CSIC lidera el comité de protección intelectual formado por representantes de los grupos de investigación, y sus oficinas de transferencia, que han generado propiedad industrial e intelectual en el

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Tel.: 91 568 14 77
g.prensa@csic.es
www.csic.es/prensa

proyecto. La finalidad del comité es velar por que los avances de la investigación se traduzcan en una mejora en el tratamiento de los pacientes, a través de la comercialización de los resultados. "IMCUSTOMEYE es un proyecto muy ambicioso en el que se está trabajando para que nuevas soluciones oftalmológicas lleguen a todo el mundo. Este proceso requiere la concurrencia de múltiples actores y la coordinación a través del comité creado favorecerá sinergias, maximizando el resultado del trabajo conjunto de investigadores, socios comerciales e instituciones desde el inicio del proyecto", subraya **Ángela Ribeiro**, la vicepresidenta adjunta de Transferencia del Conocimiento.

IMCUSTOMEYE, coordinado por VioBio Lab del Instituto de Óptica del CSIC, es pionero a nivel mundial en el diagnóstico ocular de imágenes ópticas múltiples e incluye líderes internacionales en óptica biomédica y biomecánica de la Academia Polaca de Ciencias, la Universidad Nacional de Irlanda y la Universidad de Liverpool (Reino Unido).

La iniciativa también incluye compañías internacionales, seleccionadas por su experiencia técnica única en la industria oftálmica y su posición estratégica en el campo (2EyesVision, empresa de base tecnológica del CSIC, la empresa alemana Oculus y las suizas Optimeyes e IROC Science) y clínicas de oftalmología (Moorfields Eye Hospital en Londres –Reino Unido- y el Instituto Oftalmológico Fernández Vega en Oviedo), en las cuales se llevarán a cabo los estudios clínicos para probar estas tecnologías.

CSIC Comunicación