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EUROPEAN CONTACT  
LENS SOCIETY OF  
OPHTHALMOLOGISTS



## ECLSO WEBINAR

on September 4th 2021 (from 10 am until 3.15 pm CEST)

### THEMES

- An update on the treatment options for keratoconus
- Myopia management: what every ophthalmologist needs to know

SPEAKERS: Damien Gatinel (F), Farhad Hafezi (CH), Carina Koppen (B), Theo Seiler jr (CH), Alfonso Oviedo (SP), Caroline Klaver (NL), Noel A. Brennan (USA), Virginie Madariaga (F).

How to join the WEBINAR?

Participation will be free for all ECLSO members – please register in order to get access.

Information related to registration will be sent later.

## I. Editorial

After the decision to postpone the face-to-face ECLSO Congress in Paris to September 2nd and 3rd 2022, the ECLSO wants to be actively present for their members by organising a sparkling WEBINAR on September 4th of this year.

**Core themes of this free WEBINAR: “Myopia Management” and “Keratoconus Treatment”.** At the end of November 2021, ECLSO intends

to participate in the annual Rumanian Contact Lens Society in Sibiu by organising a (hopefully live) Symposium. In this way we are truly committed to fulfill our mission of informing ophthalmologists and contact lens specialists about recent developments in contactology and related topics.

This, however, is only possible if **all ECLSO members**, individually or through their **National Representatives**, participate in the upcoming Webinar on September 4th. ECLSO hereby mandates the National Representatives to officially inform and invite their members and the wider ophthalmological community in their countries to this upcoming online Symposium.

A specific word of thanks to Dr Sevda Kurna, National Representative of Turkey, Dr Marie-Caroline Trône, NR of France, whose contributions you will find in this Newsletter.

Our special recognition goes to Eef van der Worp, for his permission to publish his column in “Contactlens Nieuws Nederland” about Noel A. Brennan’s critical comprehensive survey of Myopia treatment possibilities. Noel Brennan will be a keynote speaker on this subject during our upcoming Webinar together with Caroline Klaver from the Netherlands.

Conclusion: ECLSO offers a stunning programme for the Webinar on September 4th 2021. Please register, it is free and a unique opportunity!! Stay healthy and best regards.



*President*  
Carina Koppen, MD



*Secretary-General*  
Ömür Uçakhan-Gunduz , MD

## II. News from MCLOSA by Andrena McElvanney

Andrena McElvanney, ECLSO Vice-President, draws our attention to MCLOSA, the UK medical contact lens and ocular surface society, which recently held a webinar on COVID-19 and the ocular surface. The presentations included talks on ocular inflammatory disease and the ocular management of COVID-19 patients in the intensive care unit. On Thursday, April 15th, MCLOSA hosted a webinar on Glaucoma and the ocular surface. The talks are available to view on the website [www.mclosa.org.uk](http://www.mclosa.org.uk).



Andrena McElvanney

## III. Column about Noel Brennan's comprehensive overview of Myopia Management options by Eef van der Worp

In his column in the "Contactlens Nieuws Nederland-newsletter" (original publication in Dutch) of March 2021, Eef van der Worp refers to the recent publication by Noel A. Brennan et al in the journal "Progress in Retinal and Eye Research", the highest-ranking journal in the field of ophthalmology. In his article "Evidence-based Efficacy of Myopia Control Interventions" Noel Brennan and colleagues pinpoint the possibilities, but also the limitations, of myopia control treatments and interventions.

The extensive article summarizes a number of specific points of attention: a first of which is that we should refrain from expressing the efficacy of myopia control treatments in percentages, but rather use absolute values: percentages can be misleading. This applies to the eye care specialist as well as to the industry developing the products for those interventions.

Furthermore, axial length in millimeter should become the preferred metric of choice to express these absolute values instead of using dioptric values. The subjective, but also the objective refraction is too much subject to fluctuations and (natural) variations (even in cycloplegia). Relying on those criteria, myopia control treatment efficacy is probably not as good as previously thought.

The differences in treatment efficiency of the “top-3” intervention methods aren’t very clear cut anymore. With these, we are referring to pharmaceutical intervention (higher dose atropine drops), orthokeratology (OK) and multifocal soft contact lenses for myopia treatment. In short, there is not one real superior intervention method over the other within these three. Some other treatment options clearly have less or no effect whatsoever. Atropine 0,01 % is one of them. The results of newly developed spectacle lenses for the purpose of treating myopia progression look promising, but there has not been sufficient research regarding this line of treatment till date.

It has further been established that the initial response to myopia treatment does not follow a linear fashion per se, but tapers off after some time. Also the rebound effect has to be taken into account (myopia may partly relapse after terminating the treatment). At the same time, it appears that even small steps in myopia reduction may have an important effect on the incidence of (notably) myopic macular degeneration. This means that during the relatively limited span of 8 – 12 years of age, every effort must be made to prevent myopia progression as much as possible. Hence, also according to the cited paper, it is encouraged to advise active myopia management to all myopic children under 12 years of age. This is a mission and responsibility for all of us.



Eef Van Der Worp

For the full (open access) paper by Brennan et al, please see link below.

[Brennan NA, Toubouti YM, Cheng X, Bullimore MA. Efficacy in myopia](#)

## IV. Presentation of a Contact Lens Project in France by Marie-Caroline Trône

Dear ECLSO members,

Covid-19 outbreak prolongation has led to various congress postponements again this year and limits exchanges between colleagues. Nevertheless, some collaborative projects have been carried out "at a distance" in recent months, which allows us to remain optimistic while waiting for more serene days.

Comfort satisfaction in contact lens wear is a real challenge. Discomfort in contact lenses is responsible for a decrease of the wearing time, or worse, to discontinuation. It would affect 50% of the wearers, perhaps even more these last months with the generalization of teleworking and meibomian gland dysfunction exacerbation related to mask wearing. Tear film quality analysis is essential on worn lenses and could be a way to understand the mechanisms involved. The development of new diagnostic tools could help us to better understand tear film destructureation during contact lens wear.

A non-interventional multicenter collaborative study using objective paraclinical measurements in soft contact lens wearers was conducted last year by some members of the French Society of Contactology (SFOALC) to assess tear film quality (particularly lipid layer quality).

The data collected were demographic (age, gender) and related to the type of contact lenses worn (brand, power, wearing schedule, lens care system). All patients were asked to complete an OSDI questionnaire and underwent a tear film examination with Lacrydiag® (Quantel®) including automatic non-invasive break-up time measurement, tear meniscus height analysis and interferometry.

526 soft contact lens wearers were included : 394 women and 132 men with a mean age of 42.9 +/- 15.9 years. 87.8% of the patients had silicone hydrogel contact lens equipment. 27,2% of the lenses worn were daily soft lenses and 72,8% were lenses with frequent replacement schedule (monthly or bi-weekly lenses) Interferometry was measured in 474 eyes. Lipid layer quality was poor in 39,2%, medium in 47,5% and good in 13,3%. The results showed no significant correlation between interferometry and OSDI ( $p=0,847$ ), between interferometry and tear meniscus height ( $p=0,389$ ) and between interferometry and NiBut ( $p=0,205$ )

There was no significant difference concerning material, design and replacement schedule.

The results of this work will be presented in more detail at a future congress. We hope to discuss this and other topics in the near future.



Marie-Caroline Trône

*Ophthalmologist, University Hospital of Saint-Etienne, France*

*French national representative ECLSO*

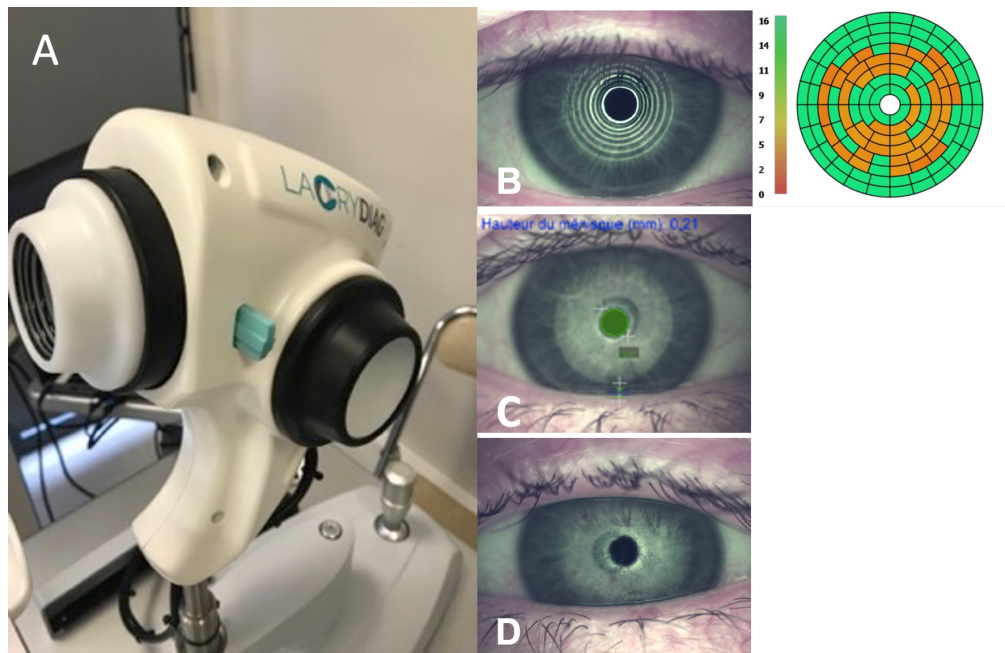


Figure: LACRYDIAG® examination (Quantel Medical, France)

- A: LACRYDIAG device
- B: automatic NIBUT measurement
- C: tear meniscus height
- D: interferometry

## V. Contribution by Sevda Kurna: How successful are we in the correction of astigmatism with toric and spherical soft contact lens fittings?

In today's digital world, our patients demand excellent vision and overall comfort from their lenses. Toric lenses are accepted to be advantageous by most of the clinicians for patients with low to moderate astigmatism but toric lenses are still underused despite the availability of modern toric lens designs with increased rotational stability decreasing lens rotation, larger parameter ranges, frequent displacement, higher oxygen permeability and better wetting. A question in the correction of astigmatism with soft toric and soft spheric lenses is how successful we are in the neutralization of refraction, or that the higher tolerance and adaptation of patients is making us think that we are successful? Theoretically, soft toric lenses should neutralize the corneal astigmatism, while spherical soft lenses partially



neutralize it, mainly because of the thickness of these lenses. Though patient satisfaction and subjective visual data point out important clues, confirming these data more objectively by autorefractometry and topography will be useful in our overall evaluation. The success of the fitting technique can be assessed in consideration of manifest refraction with the toric and spheric soft contact lenses in situ on the eye.

We evaluated patients with astigmatism and divided into 4 groups as having more than 1.25 D or having 0.75–1.25 D of corneal astigmatism using soft toric lenses (Group A and B) and having 0.75–1.25 D or less than 0.75 D of corneal astigmatism using soft spheric lenses (Group C and D). The success of contact lens fitting was evaluated by three parameters: astigmatic neutralization, visual success, and retinal deviation. (Astigmatic neutralization compares the effective neutralization of corneal astigmatism as residual/total cylinder and is expressed as a percentage. The mean retinal deviation simplifies the combined effect of spherical, cylindrical power and axis into a single dioptric measure. Residual refractive errors of patients over contact lenses are devised as absolute spherical equivalent fraction.)

We accepted less than two rows of spectacle – contact lens difference for visual performance and less than 0.50 D of retinal deviation as a successful response. For the highly astigmatic Group A (>1.25 D), residual mean retinal deviation success was low (80%), but visual success rates were encouraging (100%) after soft toric lens application. Astigmatic neutralization value was  $-52\%$  ( $\pm 28\%$ ) (The minus sign represents a decrease in the contact lens surface cylinder compared with the original corneal surface power.)

For the patients with low astigmatism (between 0.75–1.25 D) using toric and spheric lenses (groups B vs C), visual success rates (<2 line loss) were 96% in spheric lenses and 100% in toric lenses ( $P = 0.674$ ). Residual retinal deviation success (<0.50 D) was 78% in spheric lenses and 95% in toric lenses ( $P = 0.551$ ). Astigmatic neutralization value was  $-53\%$  ( $\pm 26\%$ ) in toric lenses and  $-94\%$  ( $\pm 25\%$ ) in spheric lenses. For the low astigmatic Group D, visual success rate (2 line loss) was 100% and residual retinal deviation success (<0.50 D) was 95% while the astigmatic neutralization increased to  $+126\%$  ( $\pm 16\%$ ) in patients having less than 0.75 D cylinder and using spherical contact lenses. Going a step further, when visual performance success was considered less than one row of spectacle-contact lens



difference, success percentages were 80%, 100%, 78.2%, and 82% in Groups A, B, C, and D, respectively. Favoring toric lenses in low astigmatism. The evaluation of topographic data showed that, toric lenses caused central neutralization and dispersion of bow tie appearance through the periphery, However, with soft spheric lenses, the previous bow tie appearance persisted centrally, which implied that the neutralization process was inadequate (Figure 1,2,3). Another question in mind is about the effects of the designs of spheric and toric contact lenses on the success of visual performance. Myopic and astigmatic patients differ in terms of higher-order aberrations. We have compared aspheric Balafilcon A spheric and toric lenses for myopic and astigmatic eyes ( $> 0.75$  diopters of corneal astigmatism) and observed that low-contrast sensitivity values do not differ for both on- and off-eyes. Mean total higher-order aberration (HOA) values increase from  $0.29 \pm 0.10 \mu\text{m}$  to  $0.33 \pm 0.10 \mu\text{m}$  after aspheric soft lens application in the myopic group, while it decreases from  $0.42 \pm 0.14 \mu\text{m}$  in off-eye to  $0.37 \pm 0.23 \mu\text{m}$  in on-eye after toric lens application in the astigmatic group. When we compared different designs of toric lenses Balafilcon A with prism blast toric system and spherical designed Senofilcon A with accelerated stabilization toric system, we observed that contrast sensitivity increased approximately 4.8–5.4 letters with toric contact lenses. Total higher-order aberrations were  $0.37 \pm 0.23 \mu\text{m}$  with Balafilcon A lens,  $0.43 \pm 0.15 \mu\text{m}$  with Senofilcon A ( $p=0.507$ ). Trefoil values were significantly higher with Senofilcon A lenses compared to Balafilcon A lenses.

In conclusion, toric lenses are superior to spheric lenses in patients with low to moderate astigmatism. Toric lenses cause central neutralization and decrease corneal cylinder while spherical lenses fail to mask corneal toricity during topography and even lead to an increase in the patients with low corneal astigmatism. In addition, toric lenses may provide better low contrast visual acuity and a decrease in aberrations, depending on the design.



Sevda Kurna

## References

1-Aydın Kurna S, Sengor T, Un M, et al. Success rates in the correction of astigmatism with toric and spherical soft contact lens fittings. *Clin Ophthalmol*. 2010; 4: 959–966. 2-Aydın Kurna S, Demir M, Altun A et al. The Evaluation of the Effects of Differently-Designed Toric Soft Contact Lenses on Visual Quality. *Turk J Ophthalmol* 2013; 43: 253-7. 3- Demir M, Aydın Kurna S, Sengor T et al. Assessment of aberrations and visual quality differences between myopic and astigmatic eyes before and after contact lens application. *North Clin Istanbul* 2015;2(1):1-6.

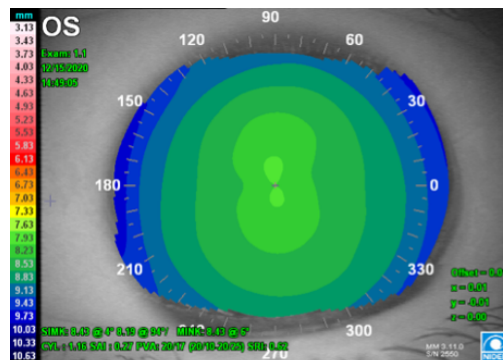


Figure 1: Topography of a patient with high myopia(-6,50 D) and low astigmatism(-1.00x180 D). Corneal astigmatism value(cyl) is 1,16 D.

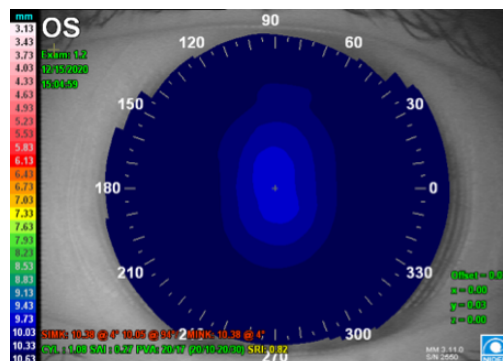


Figure 2: Topography of the same patient with a (-6.50 D) spheric contact lens (Lotrafilcon B). Previous astigmatism persists centrally. Residual cyl

value is 1.08 D.

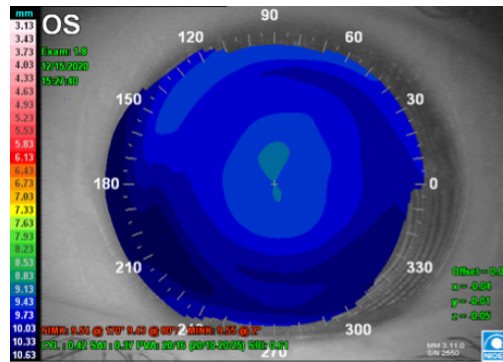


Figure 3: Topography of the same patient with a (-6.00-0,75x180) toric contact lens (Lotrafilcon B). Toric lens caused central neutralization. Residual cyl value is 0.42 D.

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