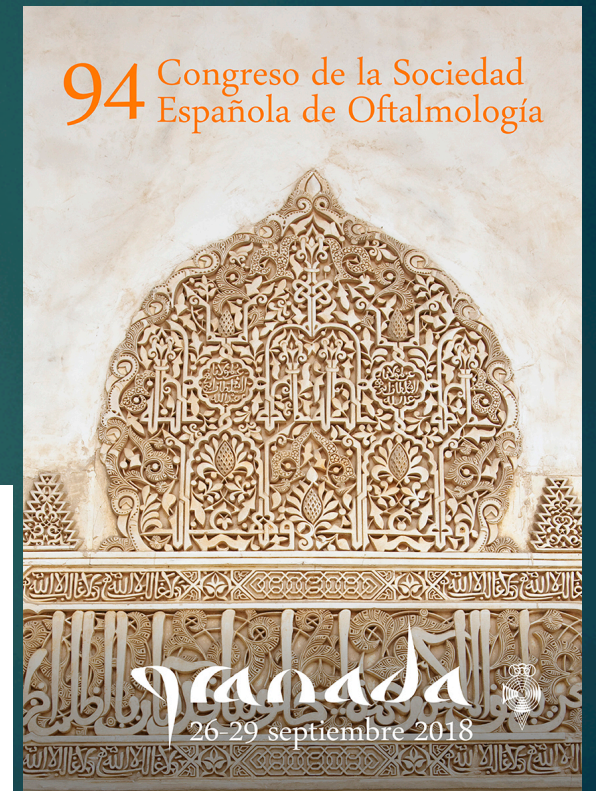




LENTES HÍBRIDAS

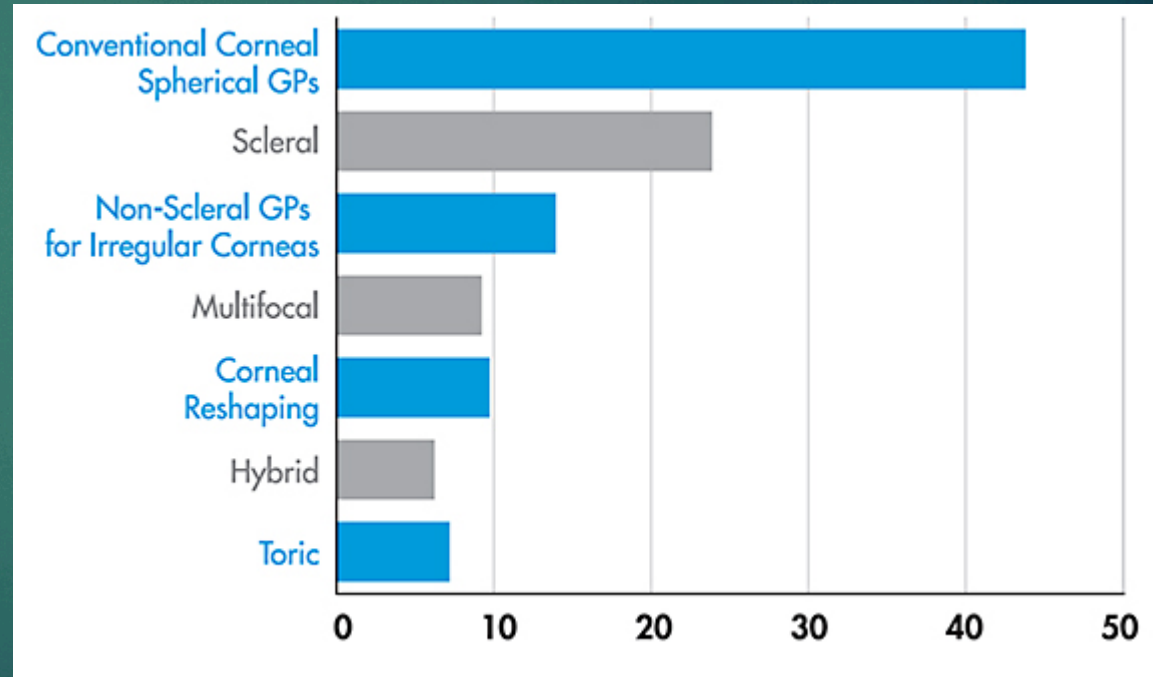
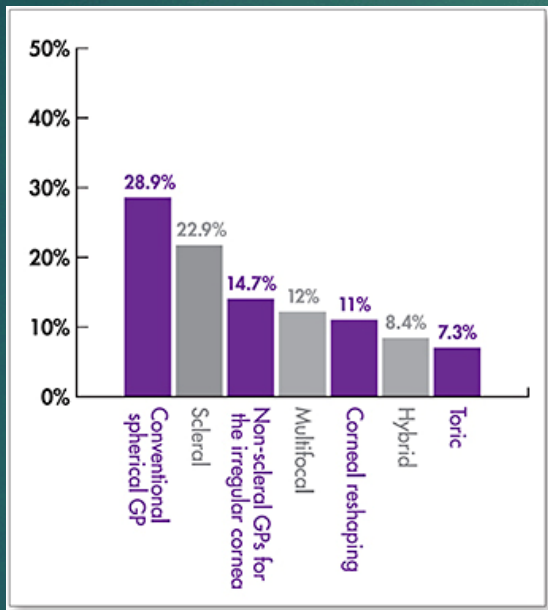
JAVIER RODRÍGUEZ MARTÍN, MD, PHD, FEBO



CAMBIO DE CONCEPTO EN CONTACTOLOGÍA AVANZADA

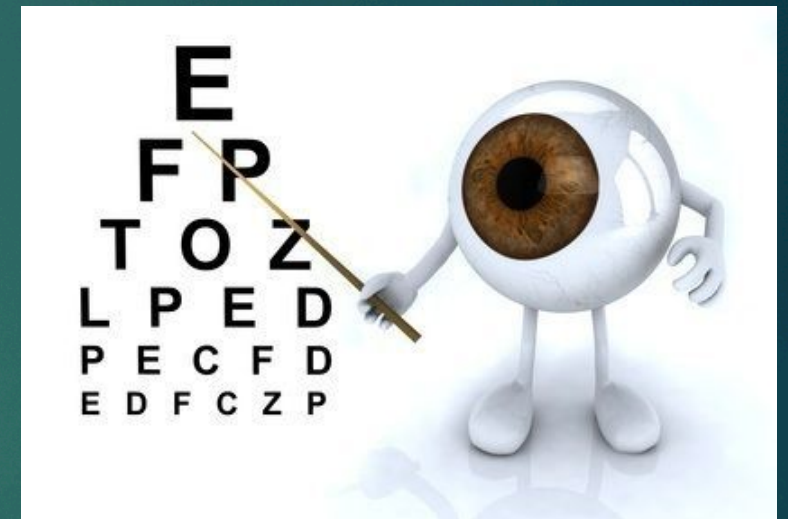


HYBRID CONTACT LENSES



OPCIONES PARA CORRECCIÓN DE ASTIGMATISMOS CORNEAL CON LC

- ▶ LENTES BLANDAS TÓRICAS
- ▶ LENTES RGP
- ▶ COMBINACIÓN: PIGGY BACK
- ▶ LENTES ESCLERALES
- ▶ LENTES HÍBRIDAS: ÚLTIMA OPCIÓN



68% de los pacientes de LHT desean tener una **visión mas nítida y estable.**

58% de ellos eligen sus LC basándose en la AV.

Bruno & Ridgeway Research Associates realizaron un estudio de mercado y encontraron:

Hay 7 veces más pacientes de lentes tóricas muy insatisfechos con sus lentes en comparación con pacientes con lentes esféricas.

Las principales razones son:

visión nocturna disminuida

visión inestable.

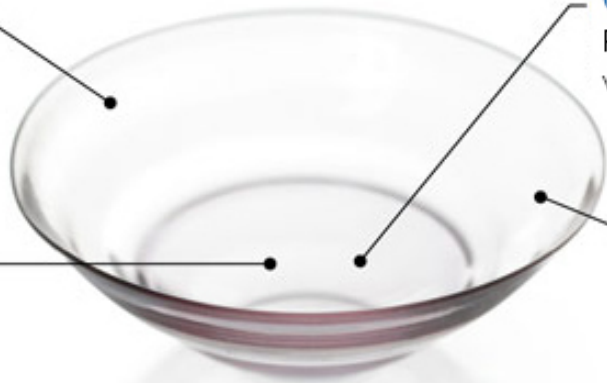
¿QUÉ SON LAS LENTES HÍBRIDAS?

Centrada y Estable

La zona blanda mantiene la lente centrada, generando una visión estable

Protección solar

La lente protege los ojos con un filtro UV

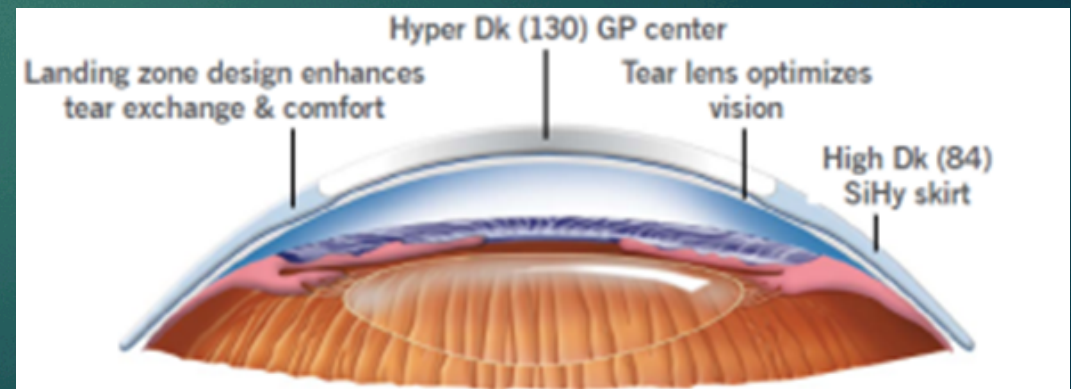


Centro Rígido

Proporciona una visión nítida

Faldón Blando

Proporciona una comodidad duradera



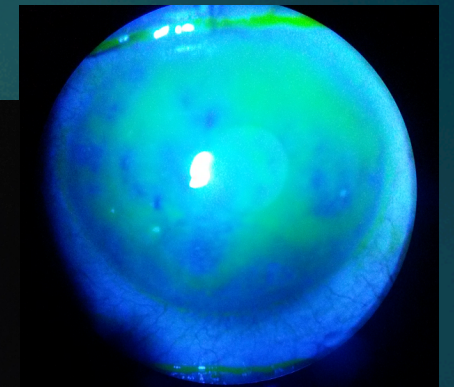
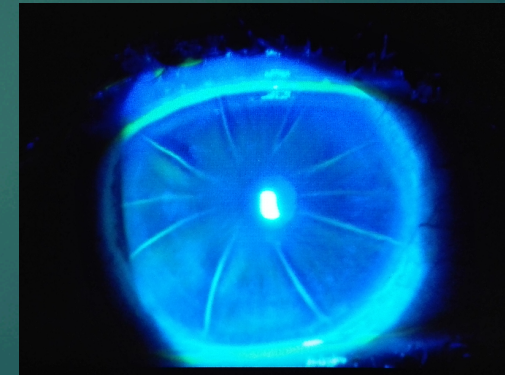
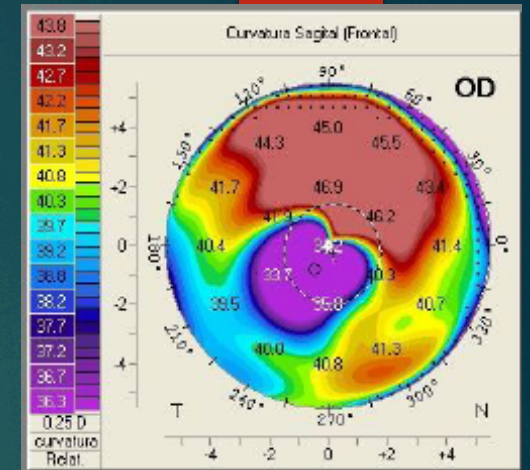
FACTORES QUE DESENCADENAN LA APARICIÓN DE LC HÍBRIDAS

- ▶ MEJORA EN LA DETECCIÓN DE ASTIG. IRREGULAR CORNEAL
- ▶ DEMANDA DE MAYOR COMODIDAD (RGP)
- ▶ COMPLICACIONES PIGGY BACK:
 - ▶ DESCENTRAMIENTO RGP
 - ▶ HIPOXIA 2ª
 - ▶ NEOVASCULARIZACIÓN



INDICACIONES

- ▶ **ASTIGMATISMO IRREGULAR (KC, DMP, POSTQX, QPP)**
- ▶ **BAJA TOLERANCIA A LENTES RGP Y ESCLERALES**
- ▶ **PATOLOGÍA DE SUPERFICIE OCULAR**
- ▶ **DEMANDA DE ALTA CALIDAD VISUAL**
- ▶ **POCA HABILIDAD/RECHAZO VENTOSA**



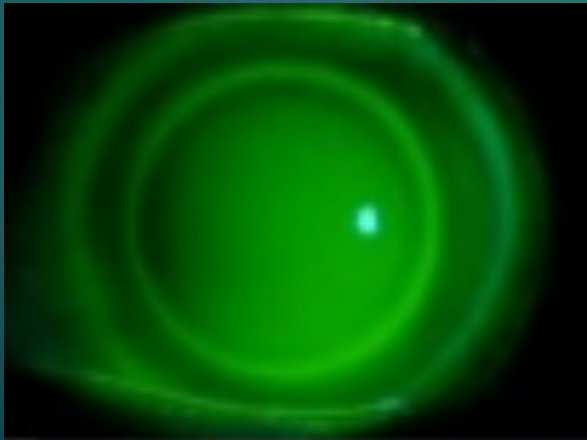
¿QUÉ VENTAJAS TIENEN LAS LENTES HÍBRIDAS?

- ▶ **APOYO:** INERVACIÓN CONJUNTIVAL << CORNEAL
- ▶ **DISEÑO:** MINIMIZA EFECTO CORNEAL: CENTRADO
- ▶ **RIGIDEZ:** MENOR INFLUENCIA PARPEBRAL
- ▶ **SÁGITA:** MENOR RESERVORIO LÍQUIDO QUE ESCLERALES
- ▶ **DIÁMETRO:** AMPLIA COBERTURA EFECTO
- ▶ **INSERCIÓN:** NO NECESARIA VENTOSA



¿QUÉ DESVENTAJAS TIENEN LAS LENTES HÍBRIDAS?

- ▶ **ADAPTACIÓN REGLADA:** RADIO BASE, RADIO DE BANDA, LIFT, POTENCIA
- ▶ **ESTUDIO DINÁMICO:** FLUOROGRAMA
- ▶ **MANIPULACIÓN:** DELICADAS, MAYOR ÍNDICE ROTURA
- ▶ **PORTE LIMITADO :** NO RECOMENDADO > 8 HRS
- ▶ **RELACIÓN PRESTACIÓN/PRECIO**



EVOLUCIÓN DE LAS LC HÍBRIDAS

MEJORA DEL DISEÑO Y DEL DK

- ▶ P/C-CIBA VISION: SATURN (1977) → SATURN II → SOFTPERM (1985)
- ▶ QUARTER LAMBDA TECHNOLOGIES-LENTICON (2001):
 - ▶ SynergEyes A
 - ▶ SynergEyes PS
 - ▶ SynergEyes KC
 - ▶ Clearkone (geometría inversa)
 - ▶ Duette (2011)
 - ▶ Ultrahealth
- ▶ ¡MULTIFOCALES!

HYBRID LENSES

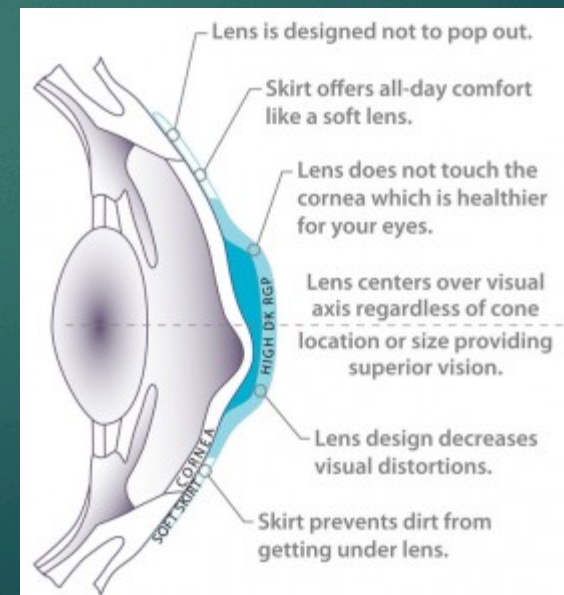
The History of Hybrid Contact Lenses

Where these lenses started and where they are today.

By Roxanna Potter, OD, FAAO

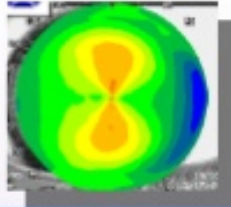
Most practitioners would agree that each contact lens modality has advantages and disadvantages. For example, while soft lenses generally offer immediate comfort and great centration, GP lenses can often provide superior optics and visual acuity in many patients.

Naturally, the search then begins for an alternative or a combination of the two modalities that will maximize the advantages of each while minimizing their less desirable properties.

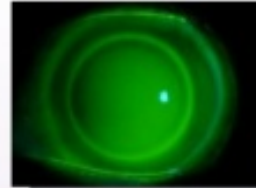


DISEÑO DE LAS LENTES HÍBRIDAS

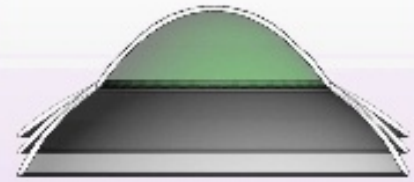
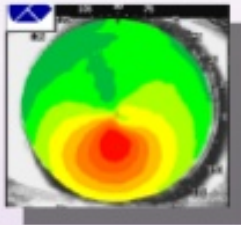
SynergEyes® A



Astigmatismo, Miopía e hipermetropía



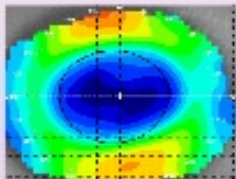
SynergEyes® KC
SynergEyes ClearKone™



córneas prolatas, que ratoconos



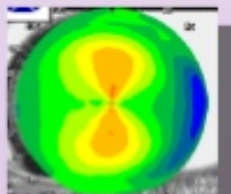
SynergEyes® PS



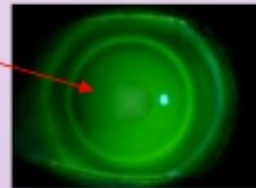
córneas oblatas, post cirugía



SynergEyes® Multifocal



Presbicia

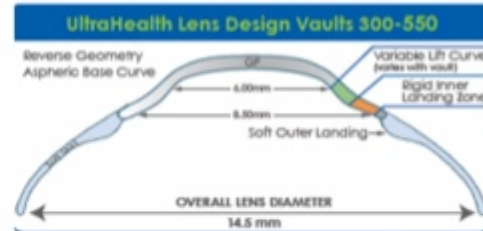
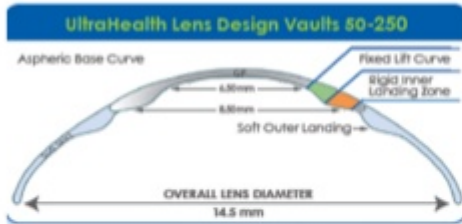


NOVEDADES EN LENTES HÍBRIDAS

UltraHealth

UH Fixed Lift Curve 250 μ and Below

UH Variable Lift Curve 300 μ and Above



ULTRAHEALTH^{FC}

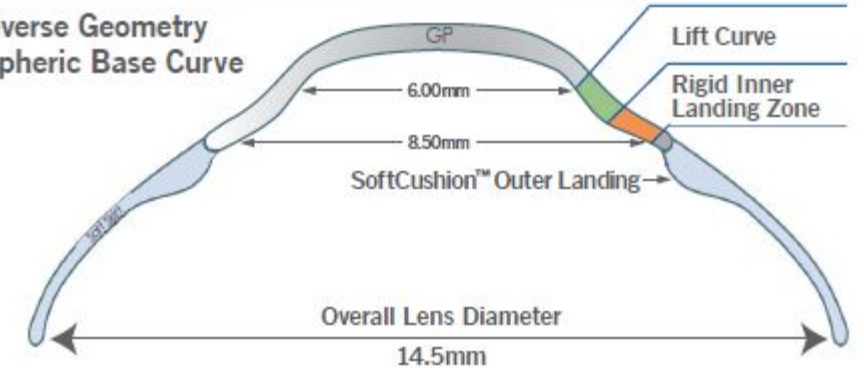
Variable Lift Curve Vault 055 - 505 μ



SynergEyes

UltraHealth Vaulted Lens Design

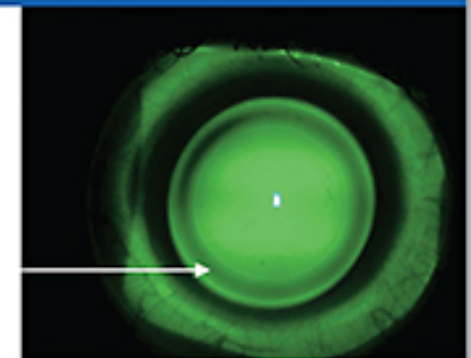
Reverse Geometry
Aspheric Base Curve



Ideal UltraHealth Fit

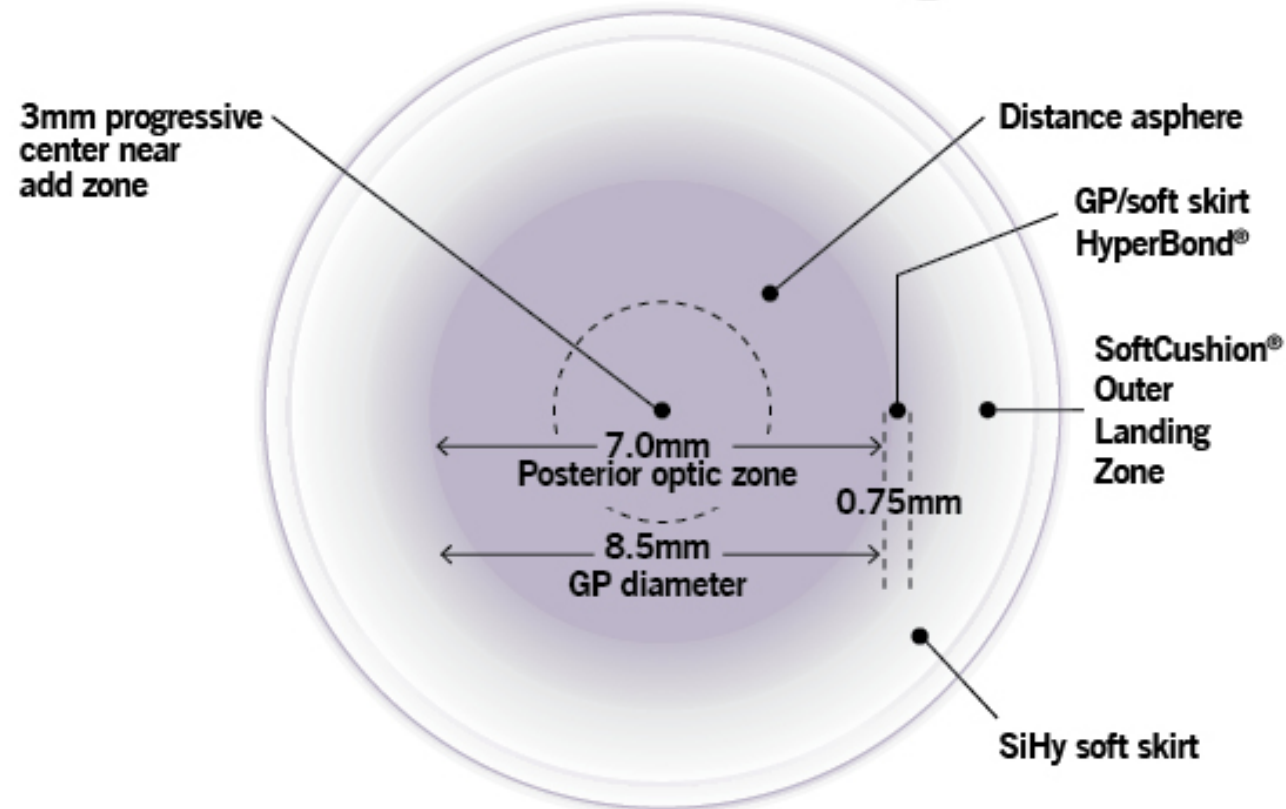
100 μ
above the
apex of the
cornea

Inner
Landing Zone

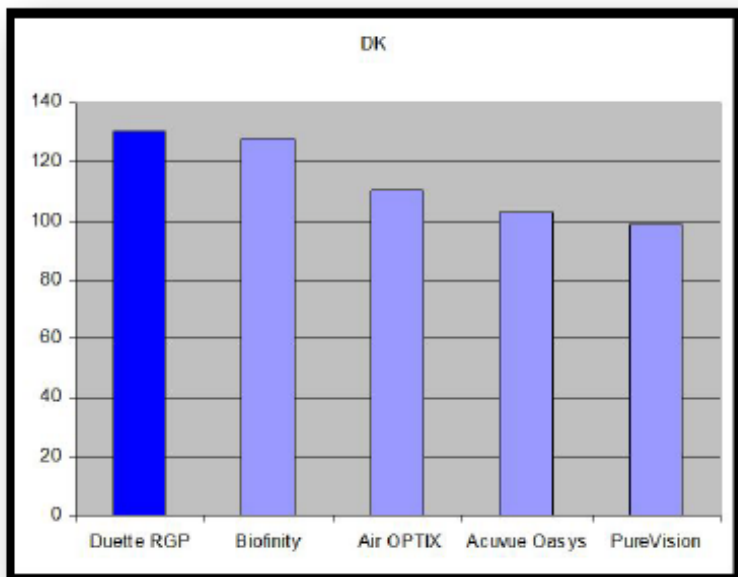


NOVEDADES EN LENTES HÍBRIDAS

Duette Lens Design

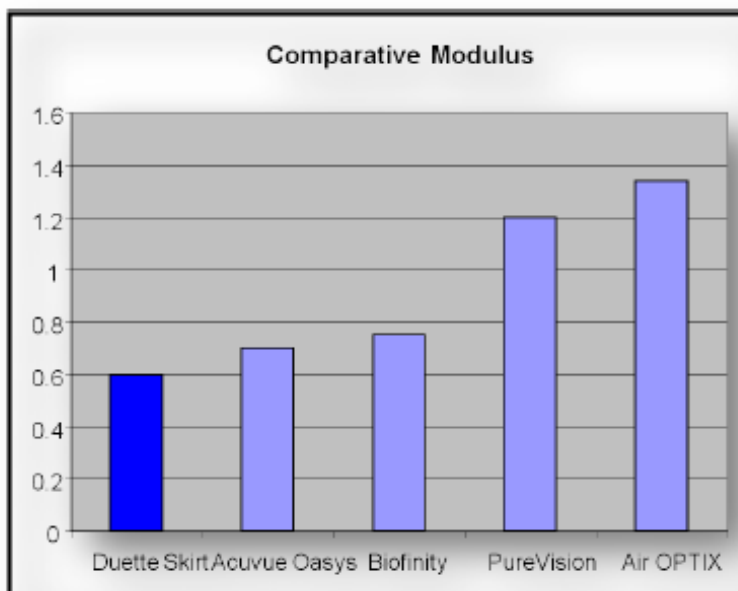


Gráfica comparativa dK

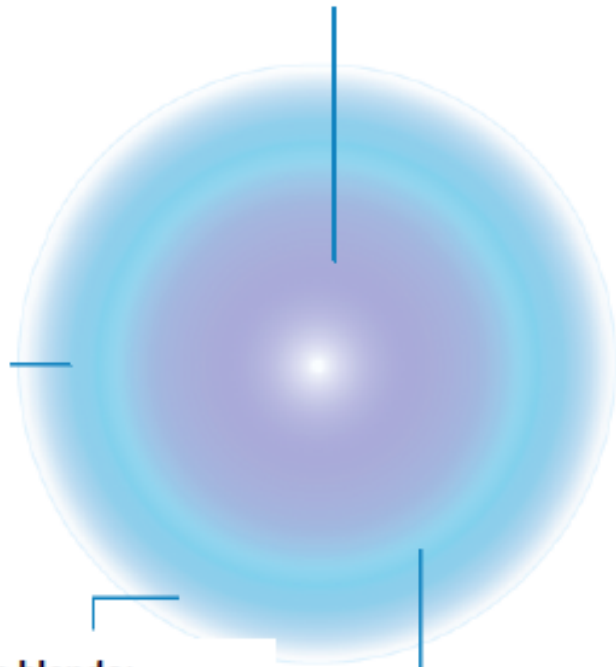


Source: Contact lenses; fifth edition, Edited by Antony J. Philips and Lynne Speedwell published by Butterworth Heinemann Duette™: Data on File

Gráfica comparativa módulo de elasticidad



Centro RPG: visión en alta definición

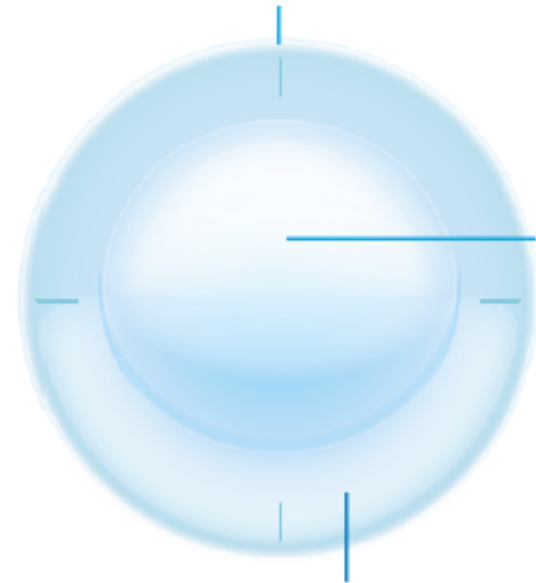


Simetría rotacional: elimina la falta de definición al abrir y cerrar los ojos, o cambio de mirada

Faldón blando: intercambio lagrimal y movimiento

Menisco lagrimal uniforme: disminuye las aberraciones

Marcas de la lente: necesitan ser evaluadas



Lente blanda: óptica "blanda"

Sistema de estabilización: requiere reposicionamiento en cada parpadeo

EVIDENCIA CIENTÍFICA

[Eye Contact Lens](#). 2018 Sep;44 Suppl 1:S66-S70. doi: 10.1097/ICL.0000000000000326.

Clinical Performance of a Spherical Hybrid Lens Design in High Regular Astigmatism.

[Abou Samra WA](#)¹, [El-Emam DS](#), [Kasem MA](#).

Author information

Abstract

OBJECTIVES: To evaluate safety, efficacy, and comfort of a spherical hybrid contact lens design in management of the regular astigmatic cornea.

METHODS: This prospective study included 18 eyes from 18 subjects with regular corneal astigmatism greater than -3.00 diopters. All patients were fitted with optimal hybrid contact lenses. Demographic data and fitting parameters were recorded. Patient refraction, visual outcomes, contrast sensitivity, and glare levels were measured 2 weeks, 3 months, and 6 months after the start of lens use. Duration of lens use, comfort grades, causes of lens discontinuation, and any noticed complications were recorded.

RESULTS: An average of 1.8 lenses (range 1-3) was required to achieve the optimal fit. Average logMAR visual acuity had improved significantly from 0.92±0.03 to 0.03±0.04 ($P<0.001$) at the last follow-up. Contrast sensitivity and glare tests were also significantly improved. Statistical analysis of the subjective responses indicated a strong acceptance of the lens by most of the patients. Mean wearing time of lenses was 10.1±3.2 hr/d. Causes of discontinuation were discomfort (2 patients), high lens price (2 patients), and handling problems (1 patient). Minimal complications were demonstrated in wearers of the lenses during follow-up visits.

CONCLUSION: Spherical hybrid contact lenses provide a good option for patients with regular astigmatic corneas. They provide optimal visual function with high comfort and patient satisfaction, especially when surgery is undesirable or contraindicated.

[Eye Contact Lens](#). 2014 Mar;40(2):95-8. doi: 10.1097/ICL.0000000000000016.

ClearKone-Synergeyes or rigid gas-permeable contact lens in keratoconic patients: a clin decision.

[Hashemi H](#)¹, [Shaygan N](#), [Asgari S](#), [Rezvan F](#), [Asgari S](#).

Author information

Abstract

OBJECTIVE: To compare the best-corrected visual acuity, the eye, tolerance, and handling of ClearKone-Synergeyes keratoconus.

METHODS: This comparative case series was conducted of each patient was evaluated on the same day when the (NEI-VFQ 25) questionnaire was assessed in addition to

RESULTS: The BCVA did not show a significant difference in general vision ($P=0.008$), ocular pain ($P<0.001$), distance driving ($P=0.016$), driving ($P=0.067$), total score of the NEI-VFQ ClearKone-Synergeyes group when compared with the RGP

[Niger J Clin Pract](#). 2018 Apr;21(4):451-455. doi: 10.4103/njcp.njcp_103_17.

Hybrid contact lenses for visual management of patients after keratoplasty.

[Altay Y](#)¹, [Balta O](#)¹, [Burcu A](#)¹, [Ornek F](#)¹.

Author information

Abstract

AIM: This study aims to report the outcomes of new-generation hybrid contact lenses for visual rehabilitation of postkeratoplasty patients.

MATERIALS AND METHODS: Twenty eyes of twenty postkeratoplasty patients were fitted with hybrid lenses. Each patient's keratometric values, ocular surface irregularity indices, central corneal thickness (CCT), uncorrected visual acuity (UCVA), spectacle-corrected visual acuity, contact lens-corrected visual acuity, contact lens fitting data, and contact lens daily wearing time were recorded. Follow-up examinations were performed at 1st week, 1st month, and 3rd month visit after successful fitting of the lenses.

RESULTS: The mean age of the patients was 38.42 ± 4.89 years. The mean spherical component of refractive error was -4.46 ± 2.1 D, and the mean astigmatism was -5.31 ± 1.55 D. The median UCVA was 1.00 logarithm of the minimum angle of resolution (logMAR) which improved to 0.40 logMAR after spectacle correction. The median visual acuity with hybrid contact lenses was 0.05 logMAR. The median CCT was 544.4 µm and increased to 549.2 µm at 3 months after contact lens wear. The difference was not statistically significant ($P = 0.38$). The mean follow-up of patients was 4.32 ± 0.45 months. Eighteen of twenty patients reported a mean of 8.37 ± 1.95 h comfortable wearing time per day during this period. Two patients discontinued contact lens wearing due to conjunctival hyperemia. No graft-related complications such as graft rejection, astigmatism, and infection were observed during the follow-up period.

[Eye Contact Lens](#). 2014 Jan;40(1):2-6. doi: 10.1097/ICL.0b013e3182a70ff2.

Clinical performance of a new hybrid contact lens for keratoconus.

[Carracedo G](#)¹, [González-Méijome JM](#), [Lopes-Ferreira D](#), [Carballo J](#), [Batres L](#).

Author information

Abstract

OBJECTIVES: To compare the clinical performance of the Clearkone hybrid contact lens for the treatment of keratoconus against the habitual contact lens of the patients.

METHODS: A total of 33 eyes from 18 patients were fitted with the Clearkone. High- and low-contrast visual acuity (HCVA and LCVA), central corneal thickness (CCT), and contrast sensitivity acuity (CSF) were recorded with habitual lenses (prestudy visit) and after 1 week, 15 days, and 1 month of wear of prescribed Clearkone. Subjective vision and comfort were rated using visual analogue scales (VAS).

[J Curr Ophthalmol](#). 2017 Aug 26;30(1):85-86. doi: 10.1016/j.joco.2017.08.006. eCollection 2018 Mar.

A comparison of the visual acuity outcome between Clearkone and RGP lenses.

[Hassani M](#)¹, [Jafarzadehpur E](#)², [Mirzajani A](#)², [Yekta A](#)³, [Khabazkhoob M](#)⁴.

Author information

Abstract

PURPOSE: To compare the visual acuity outcome of the ClearKone SynergEyes™ hybrid contact lens and Boston XO rigid gas permeable (RGP) contact lens in patients with keratoconus.

METHODS: Twenty-eight eyes with keratoconus participated in this study. The visual acuity was examined once with the RGP lens and once with the ClearKone SynergEyes™ hybrid contact lens.

RESULTS: The mean corneal keratometry, the mean lens back optic zone radius, and the mean vault was 7.23 ± 0.62 mm, 7.67 ± 0.44 mm, and 277.94 ± 104.5 µm, respectively. Visual acuity was significantly better with the ClearKone SynergEyes™ hybrid lens ($P = 0.004$). The mean best corrected visual acuity (logMAR) was 0.022 ± 0.03 and 0.057 ± 0.09 for the ClearKone and RGP lens, respectively. The Clearkone lens yields an average improvement of one line of the Snellen chart in comparison with the RGP lens.

CONCLUSION: The ClearKone hybrid contact lens and the RGP lens may improve visual acuity in corneal irregularities. But patients who are able to afford hybrid lens wearing may show better visual acuity.

Author information

VD: The aim was to evaluate the visual performance achieved with a new multifocal hybrid contact lens and to compare it with with two other currently available multifocal soft contact lenses.

his pilot prospective comparative study comprised a total of 16 presbyopic eyes of eight patients ranging in age from 43 to 58. Lenses were fitted with three different models of multifocal contact lens: Duette multifocal (SynergEyes), Air Optix AQUA multifocal (iofinity multifocal (CooperVision). Fittings were performed randomly in each patient according to a random number sequence, but period between fittings of seven days. At two weeks post-fitting, visual, photopic contrast sensitivity and ocular aberrometry were measured.

statistically significant differences were found in distance and near visual acuity achieved with the three different types of multifocal lenses ($p \geq 0.05$). Likewise, no significant differences between lenses were found in the monocular and binocular defocus (D). Concerning contrast sensitivity, better monocular contrast sensitivities for 6, 12 and 18 cycles per degree were found with the Air Optix multifocal compared to Biofinity ($p = 0.02$). Binocularly, differences between lenses were not significant ($p \geq 0.27$). Trefoil aberration was significantly higher with Biofinity multifocal ($p < 0.01$) and Air Optix ($p = 0.01$) multifocal compared to Duette.

NS: The Duette multifocal hybrid contact lens seems to provide similar visual quality outcomes in presbyopic patients with low astigmatism, when compared with other soft multifocal contact lenses. This preliminary result should be confirmed in studies with larger sample sizes.

FORMACIÓN ONLINE GRATUITA

<https://es.slideshare.net/LENTICON/curso-synergeyes-a>

<https://es.slideshare.net/LENTICON/curso-synergeyes-kc>

<https://es.slideshare.net/LENTICON/curso-synergeyes-ps>

<https://es.slideshare.net/LENTICON/curso-multifocal>

<https://es.slideshare.net/LENTICON/curso-duette>

