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Effectiveness of Ortho-K for myopia management

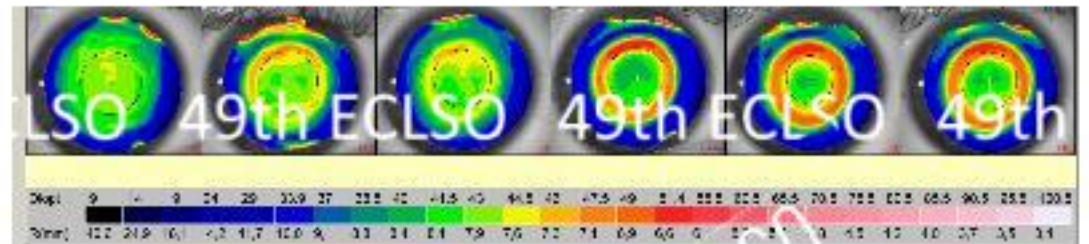
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ECLSO - PARIS

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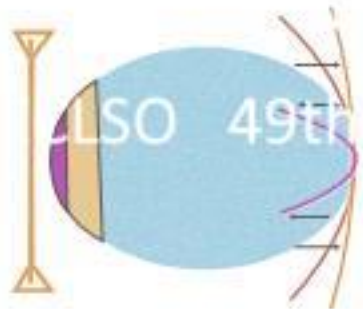
CORNEAL RESHAPPING

INTRODUCTION



CORNEAL RESHAPPING

THEORIES



Peripheral defocus



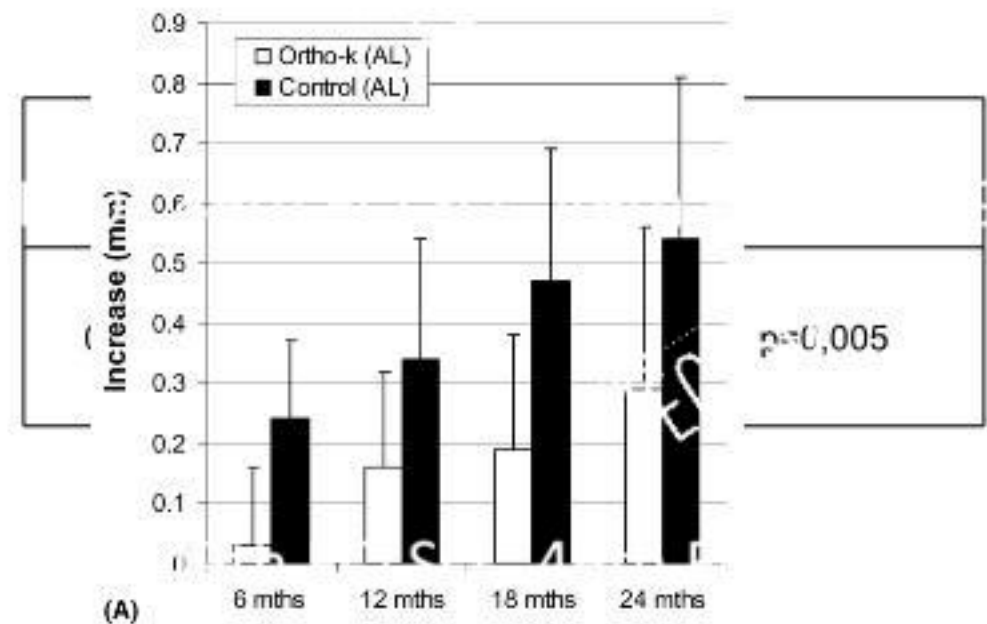
Lusk effect

MYOPIA CONTROL

LORIC STUDY - 2005

- 2 years, Hong Kong
- Axial length monitored
- Compared with spectacles

Choi P, Cheung B, Edwards M. The Loric Ortho-k contact lens study in children (LORIC) in Hong Kong: a pilot study on refractive changes and myopic control. *Curr Eye Res.* 2005 Jan;30(1):71-80. doi: 10.1080/027136805000907256



MYOPIA CONTROL

PAUNE STUDY - 2015

- 2 years, Spain
- Axial length monitored
- Compared with spectacles and soft contact lenses
- AL 38 % lower in orthoK

Figure 3. Wu et al. *Acta Ophthalmol*. 2015;93(1):10-15. doi: 10.1111/aos.12401. Epub 2015 Oct 28. PMID: 2605331, PMCID: PMC4641166.

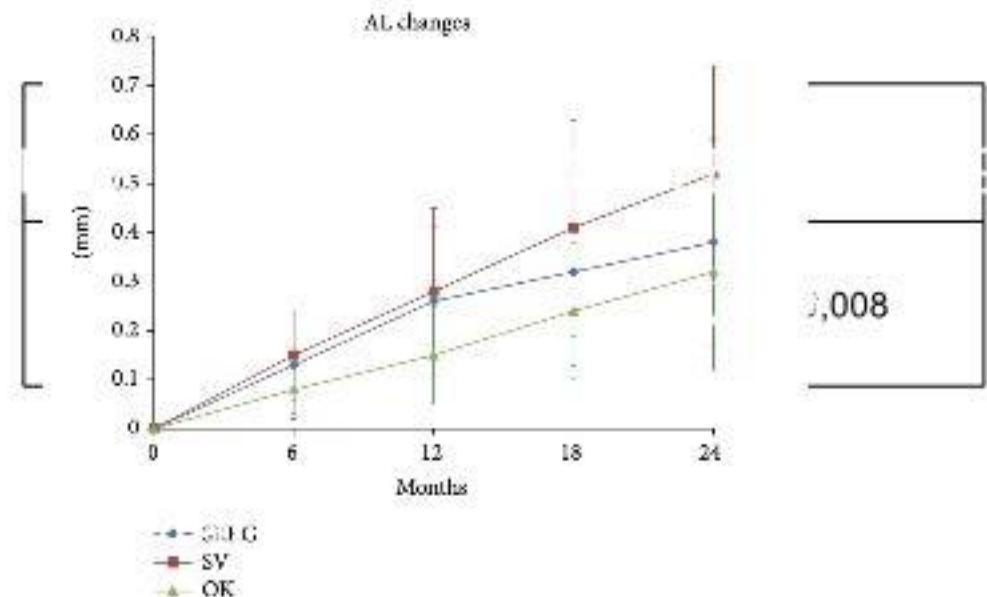


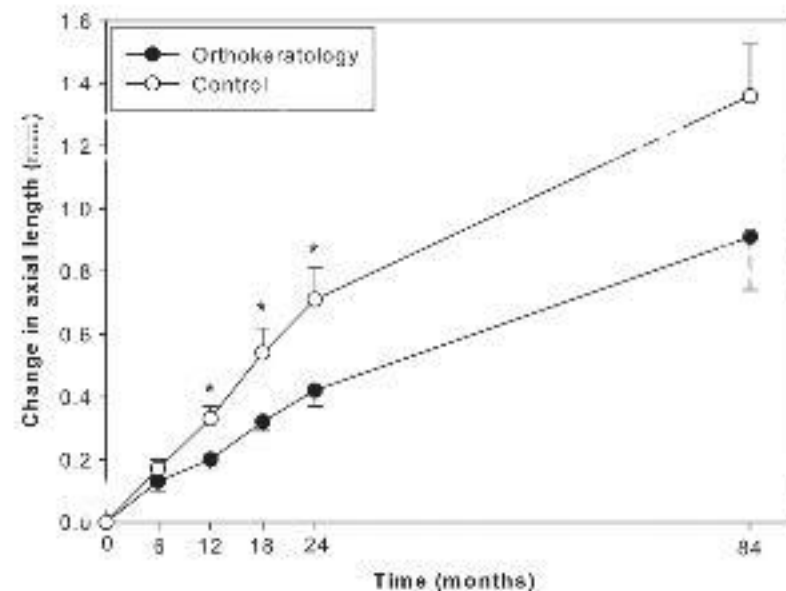
FIGURE 5: Mean and SD of AL progression (mm).

MYOPIA CONTROL

SANTODOMINGO STUDY, 2017

- 7 years, Spain
- Part of a bigger study
- AL 33 % lower in orthoK

Sancho-Saiz, Sánchez-Galindo, César-Vela-Colla, Borja and Titelman. Randomized Clinical Trial of the Long-Term Efficacy of Orthokeratology Contact Lenses, 7-Year, in Control and the Progression of Childhood Myopia. *Current Eye Research*, 42:5, 713-720, DOI: [10.1080/02713683.2016.1221979](https://doi.org/10.1080/02713683.2016.1221979)

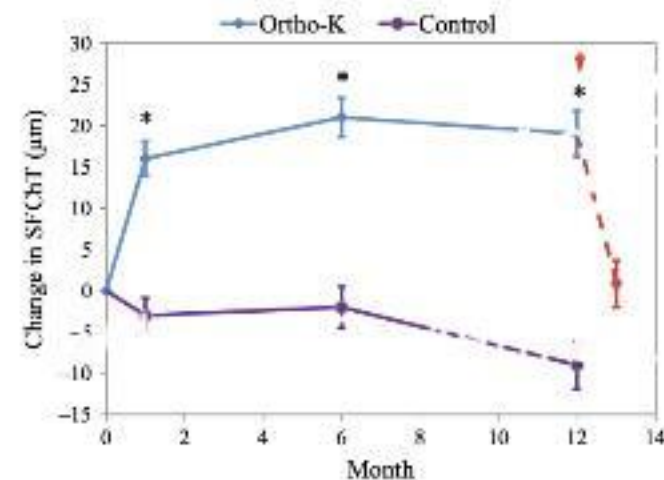
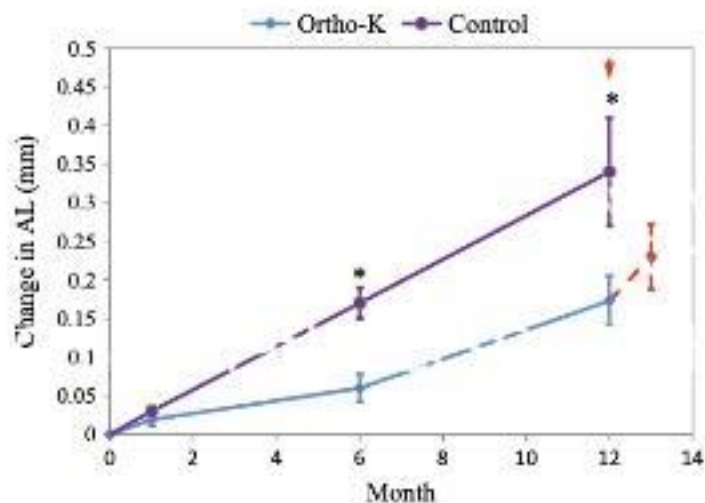


EARLY RECOGNITION

CHOROID EFFECT

- Choroid thickens under orthoK treatment
- Greater choroid thickening associated with less axial growth

Li, Z., Hu, J., Gu, D., Long, W., He, B., and Jiang, X. (2018). Change in subfoveal choroidal thickness secondary to orthokeratology and its cessation: a predictor for the change in axial length. *Acta Ophthalmol*, 97, e454-e459. <https://doi.org/10.1111/aos.13888>



EARLY RECOGNITION

CHOROID EFFECT

+ Etude

- rétrospective
 - multicentrique
 - Dr Bulot (Versailles)
 - Dr Casse (Toulouse)
 - Dr Colliot (Chantilly)
 - Dr Lecomte (Rouen)
 - Dr Pajot (St-Denis)
 - observationnelle
- Jeunes de 6 à 16 ans
 - Myopie modérée (-1D à -6D)
 - Adaptation en orthokératologie
 - OCT



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RESULTATS

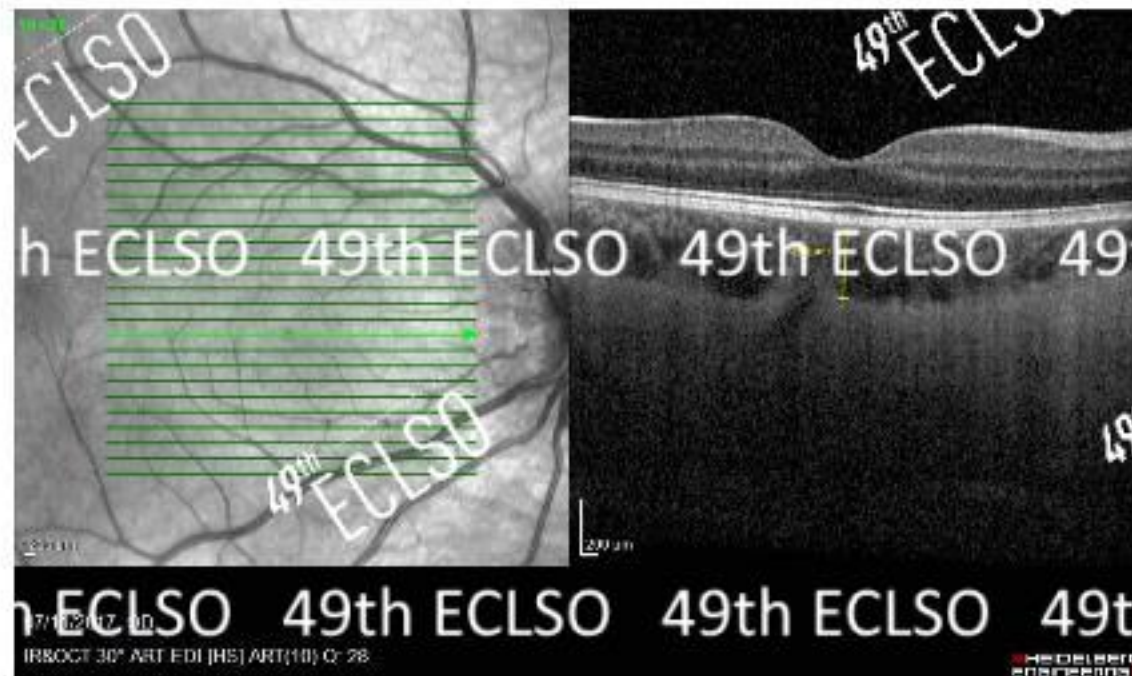
- 21 patients inclus
- 40 yeux analysés
- Age moyen : 10,9 (+/- 2,23)

Epaisseur choroidienne	J0	M1	Evolution	
Rétro-fovéolaire	245.43 ± 66.26	255.61 ± 67.51	+9.18 ± 10.46	p=0.033
Moyenne des 5 mesures	220.74 ± 46.95	227.68 ± 45.69	+7.44 ± 10.17	p=0.001

et al. Ocul. 2019;127(10):1849-55

EARLY RECOGNITION

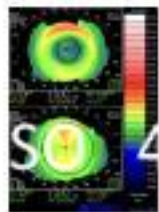
CHOROID EFFECT



DOUBTS

Treatment zone size

- Diameter matters



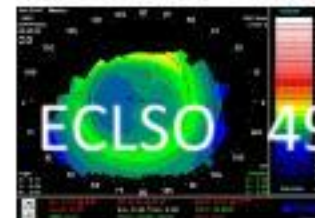
Age

- Before 9, at least before 12 ?



Mid-peripheral power

- more addition in paracentral area ?



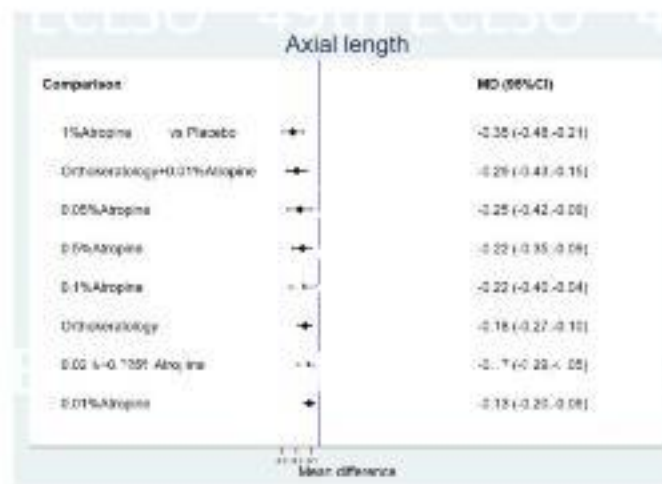
THE FUTURE

Combination

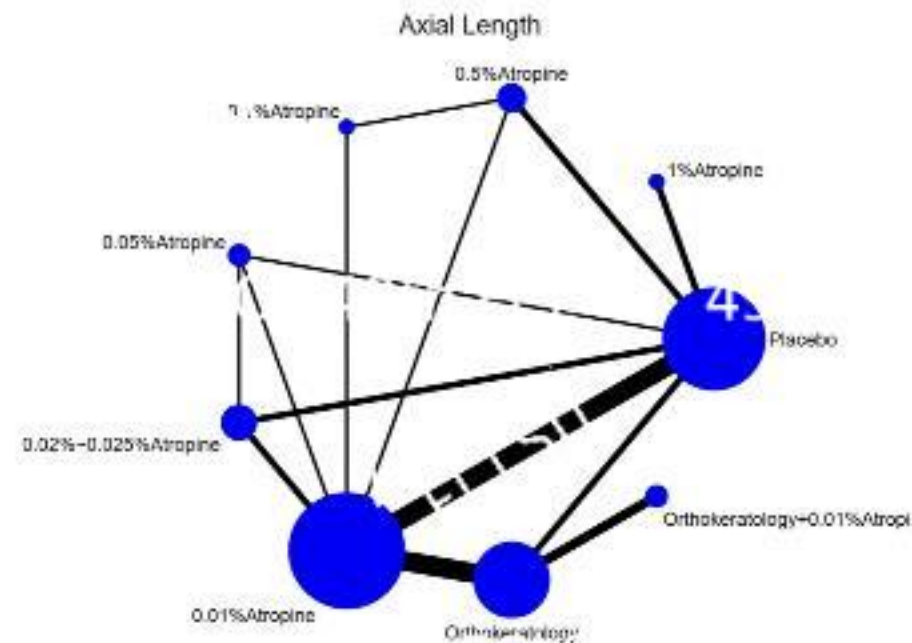
- OrthoK + outdoor + + +
- OrthoK + Atropine > OrthoK



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Tsai HR, Wang JH, Huang HK, Chen TL, Chen PW, Chiu CJ. Efficacy of atropine, orthokeratology, and combined atropine with orthokeratology for childhood myopia: A systematic review and network meta-analysis. J Formos Med Assoc. 2022 Jun 7;50(29):6646(22)00210-8. doi: 10.1016/j.jfma.2022.05.005. Epub ahead of print. PMID: 35688780.



Effectiveness of Ortho-K for myopia management

ECLSO - PARIS

