

VISUAL REHABILITATION IN KERATOCONUS ACCORDING TO DISEASE STAGE: COMPARISON OF CLINICAL PARAMETERS



ECLSO 2026 CONGRESS

The European Society of Contact Lenses and Ocular Surface

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Introduction

Keratoconus is a progressive ectatic corneal disorder that affects not only visual acuity but also patients' quality of life. The main goals of treatment are to halt disease progression and improve visual quality. Management strategies vary depending on disease stage and progression rate.

Objective

To compare the effects of different refractive correction methods on visual acuity and clinical performance in keratoconus and to evaluate stage-based differences according to the Amsler-Krumeich classification.

Methodology

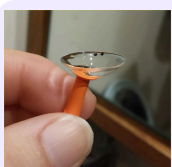
This retrospective study included 151 patients (289 eyes) with keratoconus. Eyes were classified according to the Amsler-Krumeich staging system. Uncorrected, spectacle-corrected, and contact lens-corrected visual acuity, clinical parameters, and treatment preferences were analyzed by stage.

Results

Visual acuity declined significantly with disease progression. Spectacles provided better visual rehabilitation in early stages, while RGP and scleral lenses were more frequently used in advanced stages. Contact lens-corrected visual acuity was superior to spectacle-corrected visual acuity at all stages.

CXL Findings

Corneal cross-linking was performed in 32.9% of eyes. The highest cross-linking rates were observed in stage 2 and 3 disease.



Clinical Trends Across Disease Stages

- Kmax increased with advancing stage.
- Corneal thickness decreased with disease progression.
- Anterior and posterior corneal elevation increased in advanced stages.



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Table 1. Visual acuity by stage

Parameter	Stage 1 (n:152)	Stage 2 (n:84)	Stage 3 (n:33)	Stage 4 (n:20)	p-value
UCVA	0.61	0.32	0.25	0.14	<0.001
Spectacle VA	0.85	0.62	0.46	0.21	<0.001
CL VA	0.91	0.87	0.93	0.73	0.023

Table 2. Treatment distribution by stage (%)

Parameter	Stage 1 (n:152)	Stage 2 (n:84)	Stage 3 (n:33)	Stage 4 (n:20)
CXL	22.4%	44.0%	45.0%	45.5%
Spectacles	45.4%	48.8%	27.3%	25.0%
RGP	0.7%	3.6%	3.0%	25.0%
Scleral	5.2%	9.5%	15.2%	50.0%

Conclusion



Visual rehabilitation strategies in keratoconus should be tailored to disease stage. Spectacles may be adequate in early disease, whereas RGP and especially scleral lenses become more important in advanced stages. Corneal cross-linking plays a key role in stabilization, particularly in stage 2 and 3 disease.

References

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