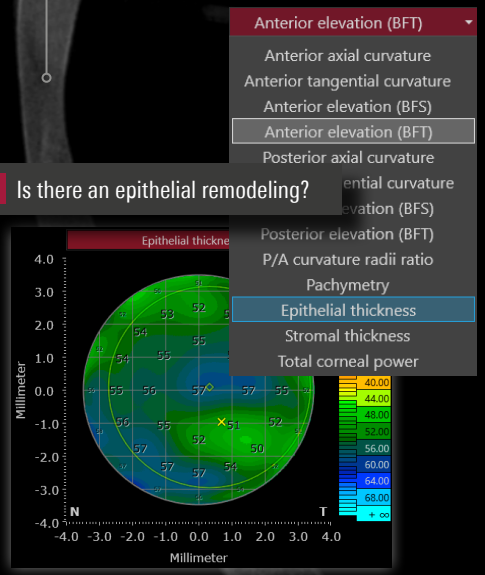
ANTERION® ECTASIA VIEW IN KERATOCONUS SCREENING

Keratoconus is a progressive corneal ectatic disorder characterized by:

- **Progressive steepening** of the cornea.
- Development of a localized cone associated with **cone-apex-centred thinning.**
- Abnormality of both the **anterior and posterior corneal surfaces.**[1]

Corneal maps and parameters are derived from swept-source OCT images.

OCT image (SCORE 59) kindly provided by Damien Gatinel, MD, PhD.



The **Epithelial thickness map** [µm] provides additional information on epithelial remodeling:

In keratoconus, focal epithelial thinning at the thinnest point of the cornea, surrounded by relative epithelial thickening, is a characteristic pattern. In this case the thinnest point in the epithelium corresponds to the anterior elevation with relative thickening present.

The **Anterior tangential curvature map** describes corneal shape based on the local radius of curvature at each point. Values are expressed in [D] or [mm] and are color-coded, with warmer/cooler colors indicating steeper/flatter areas.

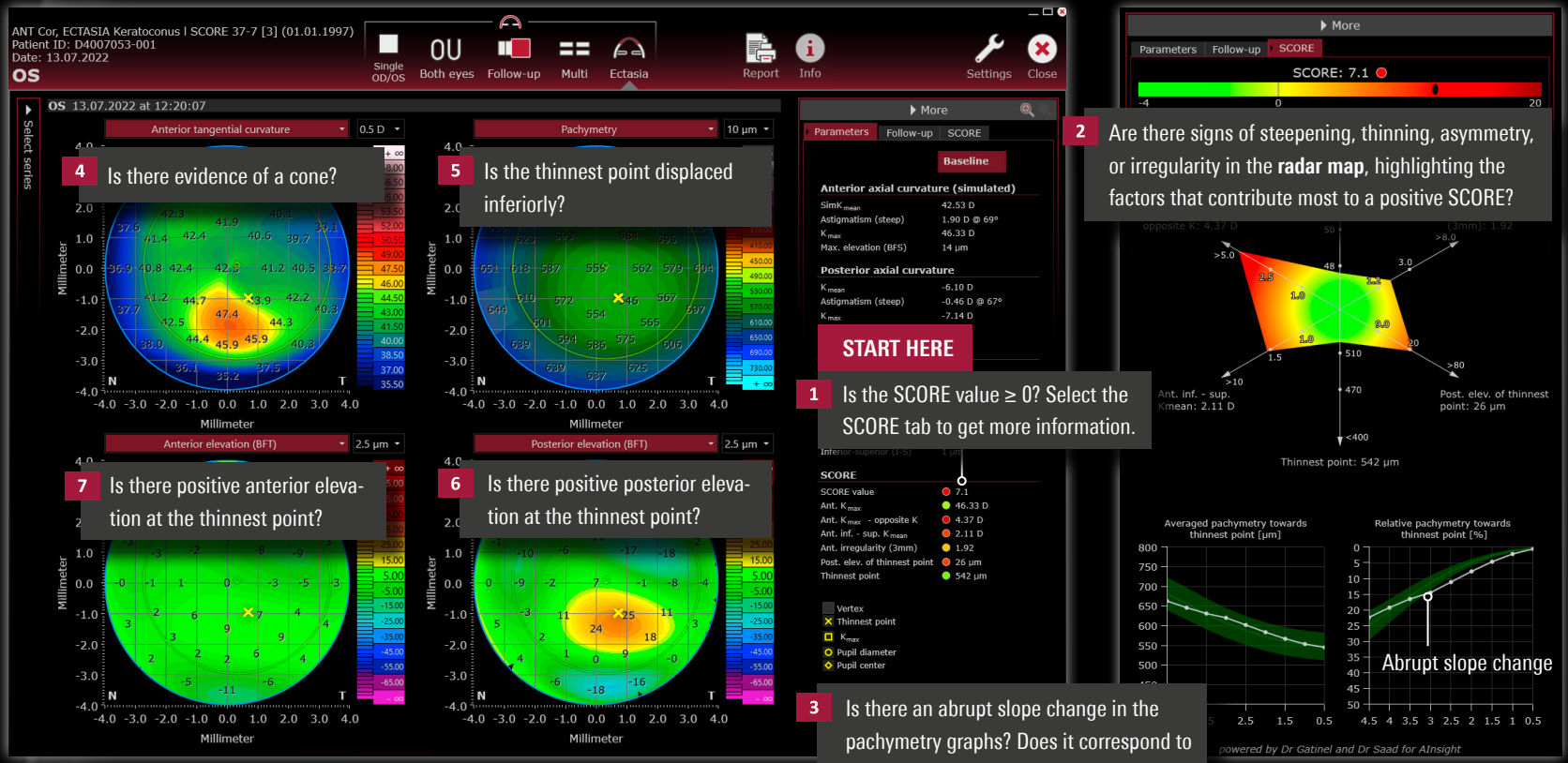
This map provides a reference to the location, size, and shape of the cone.

The **Pachymetry map** displays corneal thickness [µm], with warmer colours indicating thinner regions. The **Thinnest point** [x] overlay identifies the thinnest location.

Corneal thinning and decentration of the thinnest point are early signs of keratoconus.

SCORE is a risk evaluation tool designed to detect early ectatic changes, including steepening, thinning, asymmetry, and irregularity.

A SCORE value < 0 indicates a low risk of ectatic changes. A positive SCORE value ≥ 0 indicates risk.



4 Is there evidence of a cone?

5 Is the thinnest point displaced inferiorly?

7 Is there positive anterior elevation at the thinnest point?

6 Is there positive posterior elevation at the thinnest point?

8 Is there an epithelial remodeling?

1 Is the SCORE value ≥ 0? Select the SCORE tab to get more information.

2 Are there signs of steepening, thinning, asymmetry, or irregularity in the **radar map**, highlighting the factors that contribute most to a positive SCORE?

3 Is there an abrupt slope change in the pachymetry graphs? Does it correspond to the thinnest point in the corneal maps?

The **Anterior/Posterior elevation (BFT) map** shows corneal elevation [µm] relative to the Best-Fit Torus (BFT), removing regular astigmatism to highlight localized elevation. Positive values indicate areas above the reference surface; negative values indicate areas below it.

In keratoconus, focal positive elevation appears as a warm-coloured island pattern. In early disease, epithelial remodeling may mask elevation changes, which can be assessed using the Epithelial Thickness Map.

Pachymetry graphs show the corneal thickness profile from the periphery to the thinnest point. The green area represents the normal range (±2 SD).

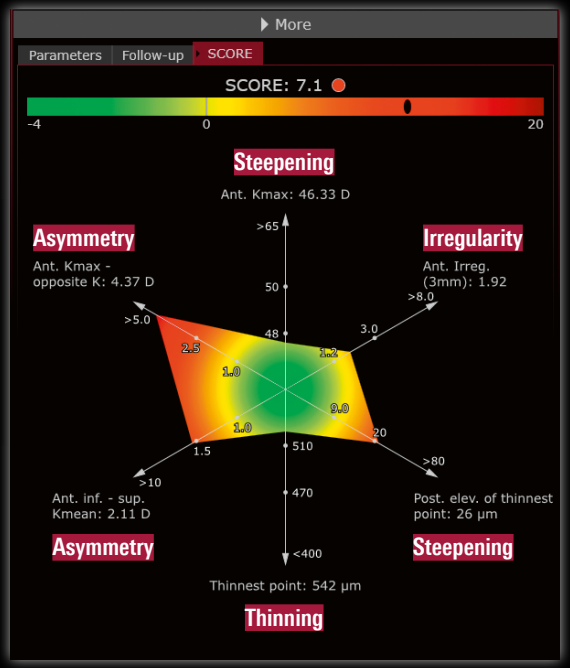
In keratoconus, corneal thickness decreases more abruptly toward the thinnest point, producing a visible change in slope.

[1] *Gomes JAP, Hafezi F, Ambrósio R Jr, et al. Global consensus on keratoconus and ectatic diseases—Edition 2. Cornea. 2026;45(7):888-908. doi:10.1097/ICO.0000000000004170*

Clinical case kindly provided by Robert Herber, Frederik Raiskup, University Hospital, TU Dresden.

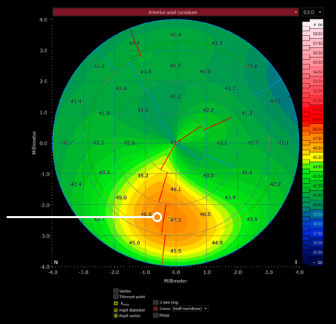
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ECTASIA VIEW PARAMETERS



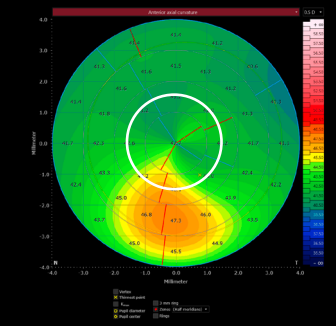
Ant. Kmax (□) represents the maximum anterior corneal curvature.

In keratoconus, **Ant. Kmax** is increased, reflecting corneal **steepening**, and is typically located within the cone region.



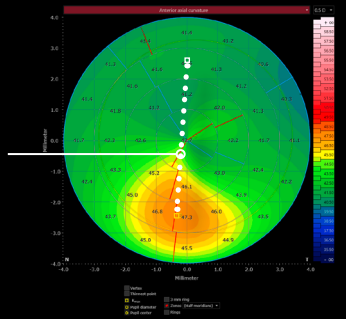
Ant. Irreg. (3 mm) quantifies the standard deviation of the anterior corneal curvature along the 3 mm ring.

In keratoconus a higher value indicates greater **irregularity**.



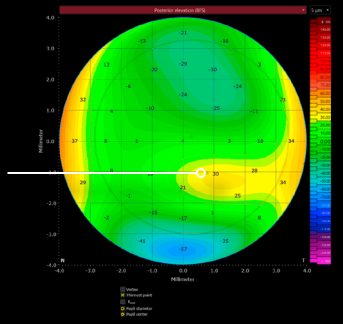
Ant. Kmax - opposite K quantifies the difference between the steepest anterior corneal curvature and the curvature at the opposite point of the cornea.

In keratoconus, a higher value reflects greater corneal **asymmetry**.



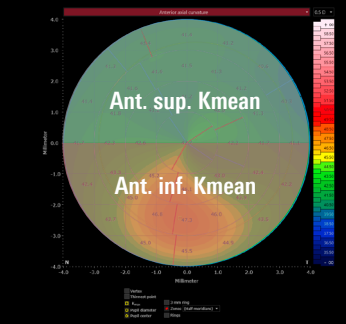
Post. elev. of thinnest point represents posterior corneal elevation at the thinnest point.

In keratoconus, increased posterior elevation reflects posterior corneal protrusion and may be an early sign of ectatic change.



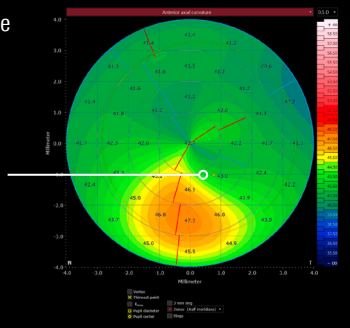
Ant. inf. - sup. Kmean quantifies the difference in mean anterior corneal curvature between the inferior and superior corneal regions.

In keratoconus, a higher value indicates greater inferior–superior corneal **asymmetry**.



Thinnest point (x) indicates the minimum corneal thickness.

In keratoconus, the value is typically reduced.



Clinical case kindly provided by Robert Herber, Frederik Raiskup, University Hospital, TU Dresden.

FOLLOW-UP

Choose between **Kmax** or **Kmean**.

Baseline

Follow-up

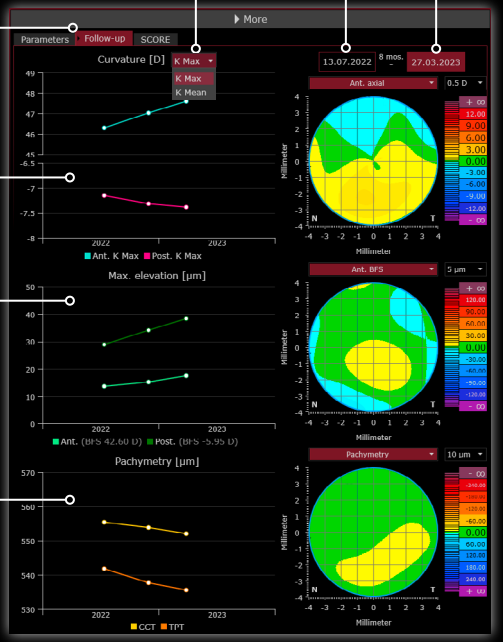
Select the Follow-up tab to compare follow-up examinations with the baseline.

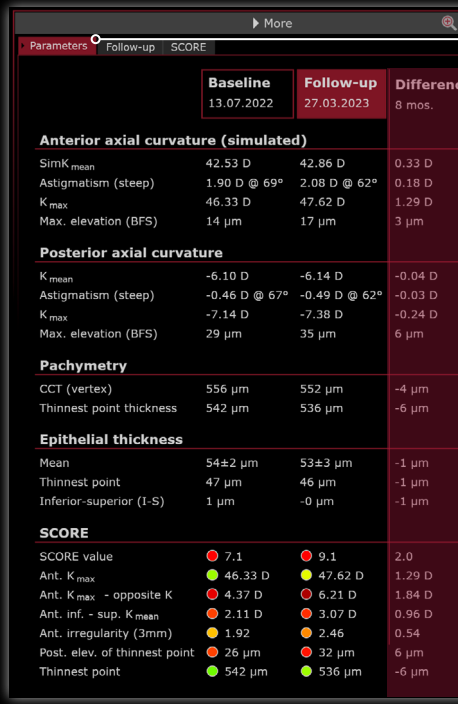
In keratoconus:

Ant. Kmax/Kmean and **Post. Kmax/Kmean** typically increase.

Ant./Post. max. elevation typically increase.

Central corneal thickness (**CCT**) and thinnest point thickness (**TPT**) typically decrease, with TPT often declining more rapidly than CCT.





Select the **Parameters** tab to monitor changes in:

- steepening
- thinning
- irregularity
- asymmetry

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