Euclid (oprifocon A) - Modern Overnight OrthoK – The Euclid System Approach

The following test is designed to certify the practitioner's knowledge of Overnight OrthoK and specifically, the characteristics of the Euclid (oprifocon A) contact lens. Please read the questions carefully and indicate the most appropriate answer on your test sheet. The test will be scored and returned to you with explanations of any incorrect answers for your review. A score of less than 75% will necessitate the test be repeated prior to certification.

The following sources of information were used in the preparation of the exam:

Euclid Systems Orthokeratology (oprifocon A) Contact Lenses for Overnight Wear – Professional Fitting Guide – Version 1 April, 2004

A Guide to Overnight Orthokeratology – Polymer Technology Corporation, Second Edition

1. The basic theory behind the rapid results obtained with the Euclid (oprifocon A) OrthoK lens involves cell migration and fluid dynamics. In which direction does the epithelium migrate?
    a. From the center toward the periphery
    b. From the anterior toward the posterior
    c. From the periphery toward the center
    d. From the posterior toward the anterior

2. Which description best matches the Euclid (oprifocon A) lens design?

    a. Four zone reverse geometry available in three standard diameters
    b. Toric peripheral lens with spherical central zone
    c. Aspheric back surface with front surface add
    d. Bi-aspheric lens with two variable parameters

3. The primary function of the reverse curve in the Euclid lens is?
    a. To provide the optical correction zone for the lens
    b. To promote lens movement across the corneal surface
    c. To control the amount of Apical touch
    d. To aid the forces controlling lens centration

4. The alignment curve on the Euclid lens is approximate to flat K. It's function in the lens design is to:
    a. Promote edge lift
    b. Link the base curve to the reverse curve
    c. Minimize movement

d. Stabilize and center the lens

5. What is the maximum amount of cylinder that should be addressed with the Euclid lens?
    a. 2.50 Diopters WTR
    b. 0.50 Diopters ATR
    c. 1.50 diopters WTR
    d. 0.75 diopters WTR

6. What is the maximum expected myopic correction with the Euclid lens?

    a. 7.00 diopters
    b. 3.50 diopters
    c. 5.00 diopters
    d. 4.00 diopters

7. Patients with large pupils may have difficulty achieving success with Orthokeratology for which reason?

    a. The treatment zone may not be large enough and will cause visual problems such as ghosting
    b. The treatment zone will be too large and will lead to myopic regression
    c. The treatment zone will be too large and will cause night time blur
    d. The treatment zone will not be large enough and will cause lens decentration.

8. Significant internal (lenticular) cylinder is not correctable by the Euclid lens for the following reason:

    a. The Euclid lens is produced with a back-surface cylinder correction
    b. The Orthokeratology procedure causes an increase in lenticular cylinder
    c. The Euclid lens only reshapes the corneal surface
    d. Orthokeratology lenses are difficult to produce

9. Which of the following patients would be a poor candidate for the Euclid Lens?

    a. –3.00-1.00x180
    b. –5.00-0.50x90
    c. –2.50-150x180
    d. –0.50-1.75x180

10. Patient education and expectations are key to the success of the Euclid lens for Orthokeratology. Which of the following statements contain factors that are true and should be stressed to patients?
    a. Need for compliance, individual response time varies, full effect may take weeks and complications can occur.
    b. Effect of lens wear is permanent, cost is minimal and few visits are required
    c. There are no cleaning solutions required, lenses are worn only as needed, the lenses cannot break and vision is at it's worst first thing in the morning
    d. All wearers are successful though frequent lens changes are required

11. The full correction desired may take a number of days to achieve. During that time period, which of the following recommendations should be given for additional visual correction?
    a. Reinsertion of the Euclid lens, use of disposable SCL's, or interim spectacles
    b. Toleration of the blurred vision
    c. Application of digital pressure to the cornea
    d. Use of rewetting drops

12. Prior to lens removal, what is the most important evaluation the patient should make?
    a. Check for mucous build-up
    b. Check for lens adherence to the cornea
    c. Check for redness around the limbus
    d. Check for excessive discomfort in the eye

13. After the Euclid lenses have been dispensed to the patient, when should the first follow-up visit be scheduled?
    a. Schedule the visit for exactly 24 hour from the dispense time
    b. The visit should be within two hours of lens removal after the first night of wear
    c. One week later
    d. Follow-up visits are only necessary if the patient is unhappy with the vision

14. Upon initial trial with NaFl, slight decentration of the Euclid lens is acceptable if it is in which direction?
    a. Superior
    b. Nasal
    c. Temporal
    d. Inferior

15. A lens with a sagittal height that is too great (steep) will exhibit which of the following fitting characteristics?
    a. Low riding, poor movement, bubbles under the reverse curve.
    b. High riding with excessive movement
    c. Nasal decentration, heavy bearing of the base curve zone on the cornea
    d. High riding with good movement

16. A lens with a sagittal height that is too small (Flat) will exhibit which of the following fitting characteristics?
    a. Well centered, dimple veiling, good movement
    b. High riding, narrow fluorescein edge pattern, narrow reverse curve.
    c. Decentration, may be high riding, excessive and inconsistent movement.
    d. Well centered, small amount of movement, bubbles in the reverse curve

17. A Euclid lens that is decentered laterally is best corrected by the following adjustment:
    a. Reducing the width of the reverse curve
    b. Increasing the lens diameter
    c. Reducing the sagittal height
    d. Making the alignment curve narrower

18. Slight lens adherence following overnight lens wear is acceptable in which of the following situations?
    a. Lens is centered over the cornea.
    b. Lens becomes mobile within 4 hours of eye opening
    c. Lens is moderately uncomfortable after eye opening
    d. Lens has moderate to severe front surface deposits

19. A patient presents at the 1 month check. His original OD Rx was–4.00-0.75X180. In this AM visit he is 20/50 with an unaided refraction of –1.00-0.25x180. On topography, the lens is well centered, there is a complete but faint 360 degree 'red ring' and there is no evidence of central islands. The unaided refraction was the same at 1 week. The patient has a history of wearing the lenses from 8-10 hours each night. Which of the following courses do you take?
    a. Tell the patient 'that's as good as it gets"
    b. Order a new lens with a higher target power to eliminate the uncorrected myopia
    c. Change to a smaller diameter lens
    d. Increase the wearing time by 4 hours per night.

Corneal topography can be a helpful tool in accessing the fit of the Euclid lens after overnight wear. The following questions refer to interpretation of the topography patterns and the appropriate corrections to the lens design.

20. What does the ‘smiley face’ pattern on topography indicate about the Euclid lens fit?
    a. Lens is decentered inferiorly
    b. Lens is decentered nasally
    c. Lens is moving excessively following the blink
    d. Lens is riding high on the cornea

21. To correct the ‘smiley face’ you should,
    a. Increase the diameter
    b. Steepen the alignment curves to tighten the lens
    c. Flatten the alignment curve to loosen the fit
    d. Steepen the reverse curve

22. A ‘frowny face’ on a topography indicates.
    a. The treatment zone is too small
    b. The lens is riding low on the cornea
    c. Excessive movement with the blink
    d. High riding lens

23. The appropriate correction for a lens demonstrating a ‘frowny face’ is,

    a. Steepen the alignment curve to tighten the lens
    b. Increase the optic zone
    c. Flatten the alignment curve to loosen the lens
    d. Increase the width of the peripheral curve

24. Lens adherence can be minimized by which of the following actions?
    a. Cleaning the lens immediately before sleeping
    b. Removing the lens immediately upon awakening
    c. Replacing the lens every six months
    d. Use of artificial tears or re-wetting drops before sleeping

25. To minimize bubble formation on the reverse curve that could lead to dimple veiling, which of the following design changes would be suggested?

    a. Tighten the alignment curve
    b. Reduce the saggital depth by flattening the reverse curve
    c. Reduce the width of the peripheral curve
    d. Steepen the reverse curve

26. What is indicated by the presence of stromal striae and endothelia folds?

    a. The fit is unacceptably steep in the center and periphery
    b. The cornea is too soft for Orthokeratology to work
    c. Excessive corneal edema due to insufficient lens oxygen transmissibility (Dk/t) during overnight wear

d. The lens thickness should be increased to allow for greater oxygen supply to the cornea

27. Horizontal Visible Iris Diameter (HVID is an important measurement in determining which of the following lens parameters?

a. Base curve and Clrx
b. Diameter selection
c. Target power
d. Optic zone size