## Contact Lenses Grading Scales

<table>
<thead>
<tr>
<th>GRADE 0</th>
<th>GRADE 1</th>
<th>GRADE 2</th>
<th>GRADE 3</th>
<th>GRADE 4</th>
</tr>
</thead>
</table>

### Bulbar redness
- **Cause**: Dilation of bulbar vessels, e.g. by mechanical stimulation
- **Normal condition**: Grade 1 to 2, younger people grade 0 found more often
- **Advice**: Evaluate always with the same magnification

### Limbal redness
- **Cause**: Dilation of bulbar vessels, e.g. by hypoxia
- **Normal condition**: Up to grade 2
- **Advice**: Often combined with bulbar redness

### Tarsal redness
- **Cause**: Dilation of tarsal vessels, e.g. by preservatives in lens care products
- **Normal condition**: Up to grade 2
- **Advice**: Roughness of the tarsal conjunctiva would also be increased

### Corneal neovascularisation
- **Cause**: Mostly due to corneal hypoxia
- **Normal condition**: Grade 0
- **Advice**: Classification based on the length of vessels grown into the cornea

### Corneal staining
- **Cause**: Superficial cells of the corneal epithelium are damaged
- **Normal condition**: Grade 0 and grade 1 if blink is incomplete
- **Advice**: Stain with fluorescein, monitor with blue light and a yellow filter

### SICS – Solution induced corneal staining
- **Cause**: Toxic reaction to contact lens solution
- **Normal condition**: Grade 0
- **Advice**: Stain with fluorescein, monitor with blue light and a yellow filter

### Polymegethism
- **Cause**: Alteration of the endothelial cell size; normally age related, in CL wear due to hypoxia
- **Normal condition**: Regular hexagonal cells of equal size
- **Advice**: Observe with a specular microscope in high magnification

### Tips for upgrading to silicone hydrogel lenses
- Wearing comfort can be different during the first fit.
- Changing to an aspheric lens design can cause a slight over-refraction of 0.25D in spite of the same back vertex power. Check whether the lens is right sided if you got a higher over-refraction.
- Preservative free lens care solution should be preferred. If the contact lens wearer wants to retain the habitual lens care solution check the cornea with fluorescein for SICS.

### Location: Cornea
- **Purpose**: To specify corneal slit lamp finding
- **Criteria**: Central zone extends 2/5 and para-central zone 4/5 of the HVID
- **Advice**: Useful for precise documentation e.g. place of an infiltrate

### Location: Tarsal conjunctiva
- **Purpose**: To grade tarsal slit lamp findings exactly if there are local differences
- **Criteria**: Central zone extends 1/3 of the height and 2/5 of the width of the lid area
- **Advice**: Tilt of the inverted lid can differ from eye to eye

### Striae and descemet folds
- **Cause**: Sign of corneal oedema, e.g. by hypoxia
- **Normal condition**: Striae often seen a few minutes after awakening, no folds
- **Advice**: High magnification and illumination, note the number of folds

<table>
<thead>
<tr>
<th>Striae and descemet folds</th>
<th>Normal condition</th>
<th>Advice</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 % corneal oedema: no stria</td>
<td>5 % corneal oedema: very few stria</td>
<td>10 % corneal oedema: more stria</td>
</tr>
<tr>
<td>7 % corneal oedema: striae and folds</td>
<td>12 % corneal oedema: striae, folds, microcysts and vacuoles</td>
<td></td>
</tr>
</tbody>
</table>

### Microcysts and vacuoles
- **Cause**: Sign of corneal oedema, e.g. by hypoxia
- **Normal condition**: No microcysts and vacuoles
- **Advice**: High magnification, monitor in the reflected light, note the quantity

<table>
<thead>
<tr>
<th>Microcysts and vacuoles</th>
<th>Advice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vacuoles (refraction with the light)</td>
<td>Microcysts (refraction against the light)</td>
</tr>
</tbody>
</table>