Oculus C-Quant straylight measurement

Quick guide

(software version 1.09)

Visual acuity: if VA<0.05, the test can not be performed. If 0.05<VA<0.2, the test might be too difficult for some patients.

Patient Data Management screen: patient data entry

Enter patient data or select appropriate patient from the patient list.
Start up examination program by single clicking the [C-Quant] button.

Oculus C-Quant screen: examination program

Before the measurement

Eye condition (usually): undilated, no glasses, no contacts, other eye should be occluded.
Room conditions (preferably): dimly lit, no background noise, height-adjustable chair or table.

Make the following settings on the screen:
Correction: Approximate best corrected spherical equivalent with one (clean!) lens only, unless cylinder>3D. Preferably use one of the (coated) trial lenses provided with the C-Quant. A deviation of best corrected value of up to 2D is easily tolerated. Ask if the patient sees the two half fields in the C-Quant.
Range: Default setting is "E(>75)". This will be proper for most mild cases. If the patient finds the test very difficult or if a high straylight value is expected (e.g. with corneal turbidities), use the setting "F(cataract)" or "G".
**Eye:** The eye that is going to be measured (left or right). **Note:** make the <Eye> setting after making the <Range> setting, otherwise the <Eye> setting will jump back to "Left".

Patient instruction:

Should include the following elements:
    Eye position
- Position the eye close to the eyepiece, keeping a minimal distance (figure a). A slight touch is good, but not firmly against it. An eye position too close (figure b) or too far (figure c) from the eyepiece may influence the measurement outcome.
- Keep your eye normally open and do not squeeze, as this may also influence the measurement outcome (figure d).
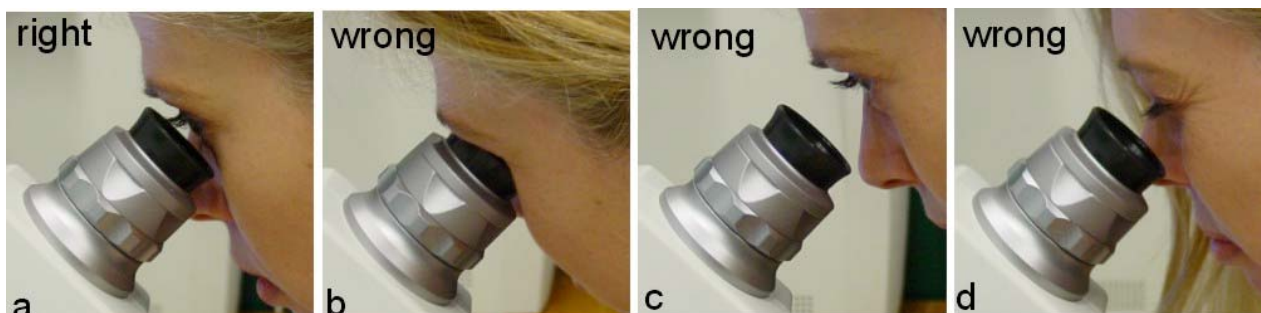
Task during the test
- Only concentrate on the two half fields in the center of the field; ignore the flickering ring.
- Compare the two half fields, decide which one flickers more clearly/strongly, and press the corresponding button on the C-Quant.
- React by first impression and react promptly. Do not try to think about a presentation. The buttons can be pressed as soon as flicker appears, shortly after the beep.
- For several presentations, it will be hard to tell the difference between the two half fields (they seem to be flickering equally strong). This is normal, and also here you must make a choice following your first impulse.

Start measurement by clicking the [Start] button.
Make sure that <Eye> and <Correction> settings are correct in the dialog box.
Click [OK] button to start the actual measurement.

During the measurement

If the patient is too hesitant to choose between the two half fields and/or refuses to press a button, you can enter responses yourself with the arrow keys on the computer/laptop. If you need to generate a random answer (in case the patient does not make the left/right choice), it is best to always press the same key (e.g. the left arrow key). Use this option cautiously.

After the measurement

1. esd≤0.08 and Q≥1 (example 1): reliable measurement. Both esd and Q are shown in black.
2. esd>0.08 and/or Q<1: esd and/or Q are shown in red, and the warning "Reliability not optimal. Consider to repeat the measurement" appears. Two options:
   a. esd≤0.12 (example 2): measurement is sufficiently reliable in most cases (ignore Q value). Repeat if possible. Before repeating, verify if <Range> setting was correctly chosen (see below).
   b. esd>0.12 (example 3): measurement is unreliable (but see below) and should be replaced. Again, first verify if <Range> setting was correctly chosen (see below).

Tips:
- If reliability does not improve, use the "G" setting for <Range>. This setting is the easiest for everybody, and should be used for difficult cases.
- If esd>0.12 using a high <Range> setting (e.g. "G"), the result might still contain valuable information. See "Practical guide".
- When it is desirable to know the exact straylight value (e.g. for follow-up measurements) after performing the test with the "G" range, another attempt could be made to obtain a reliable measurement at the patient's proper <Range> setting (the patient might have improved his performance after performing the test with the "G" range).

When to choose a different <Range> setting?
The <Range> setting might be too high if the straylight value of the patient is low. In this case, there are too many 1 responses and not enough 0 responses **(Example 4)**. The <Range> setting might be too low if the straylight value of the patient is much increased. In this case, there are too many 0 responses and not enough 1 responses. In both cases, you can only improve reliability by choosing a different <Range> setting. **Note:** It is not always clear if the chosen range was too low. In such a case it is anyway a good idea to choose a higher <Range> setting, because the test will be easier to perform then (see "Practical guide").

Quick guide: C-Quant examples

Example 1: esd≤0.08 and Q≥1.
This is a reliable measurement. Note that there is almost no overlap between the 0 and 1 responses. More overlap means a less reliable measurement.
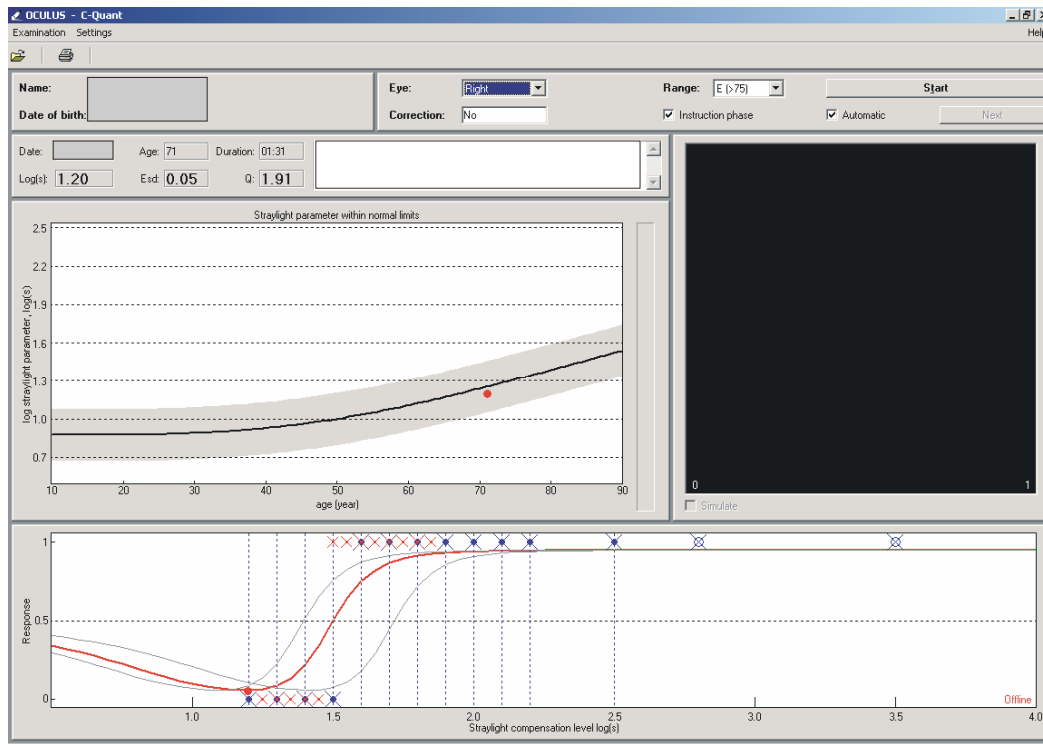

Example 2: 0.08<esd≤0.12.
Although reliability is not optimal, this measurement may be accepted as a good measurement in most cases. However, if time allows, it is recommended to repeat the measurement in order to obtain a better reliability. Note that there is quite some overlap between the 0 and 1 responses.
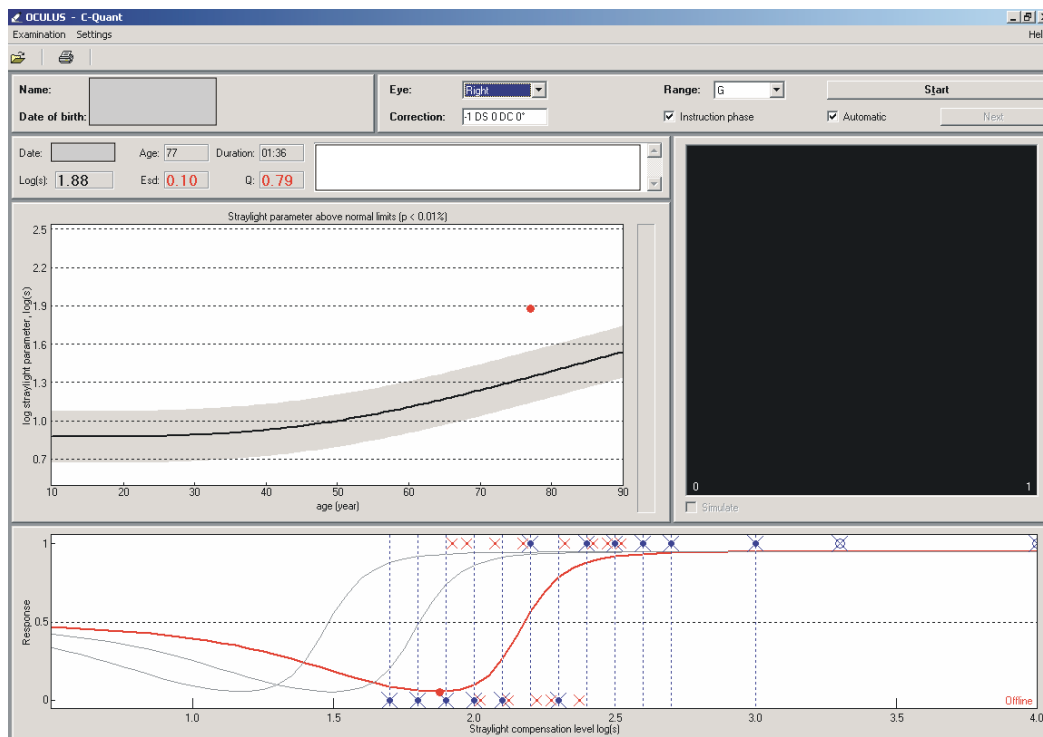
Example 3: esd>0.12

From this result you can not tell if the <Range> setting was chosen too low, or if the test is too difficult for the patient. In both cases it is wise to repeat the measurement at a higher <Range> setting, preferably the "G" setting.
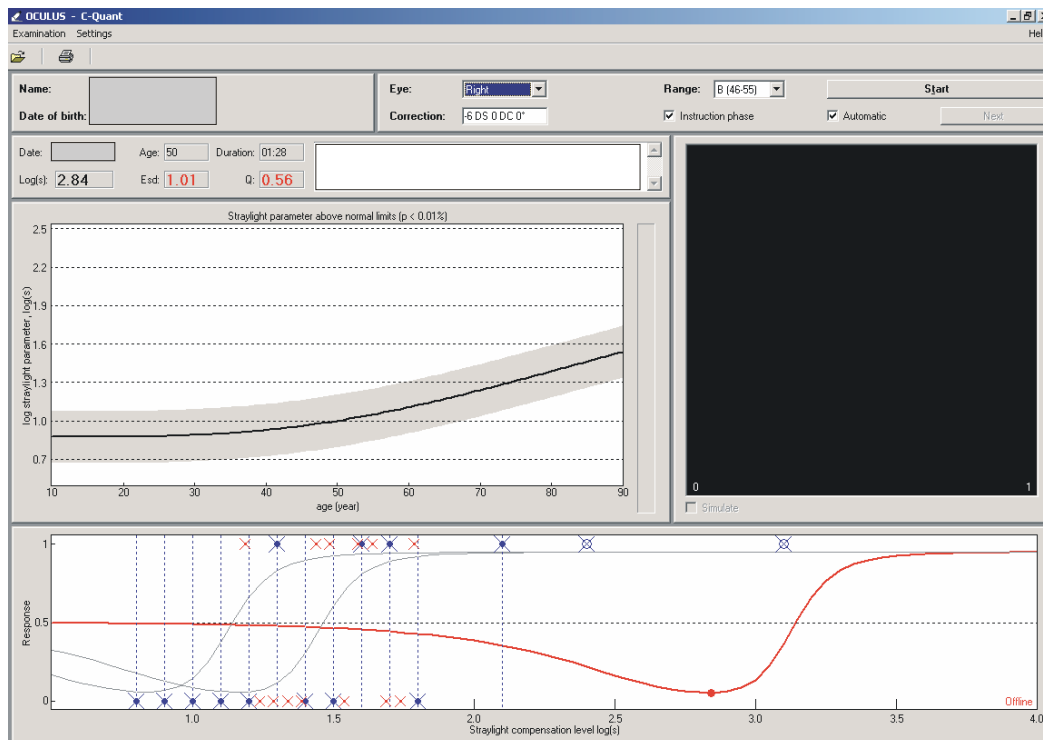
Example 4: <Range> setting too high

This measurement went very well, only there are too many 1 responses and not enough 0 responses for a reliable estimation of the straylight value. Reliability can be improved by repeating the measurement at a lower <Range> setting.