

Guide to Bailey-Lovie chart set

For many years, the Bailey-Lovie chart set has been a proven tool for determining distance visual acuity at normal and low contrast.

The Bailey-Lovie chart features a stringent logarithmic progression of optotypes. The key advantages of the logarithmic layout are:

- All line-to-line steps are equal and increase or decrease by the same factor (the factor equals 1.2589 and is derived from $^{10}\sqrt{10}$).
- When the test distance changes by a logarithmic step, the normal distance indicated on the chart also changes by a logarithmic step.
- The chart features the same number of optotypes per line and consistent spacing. Consequently, it offers the same conditions for all visual acuity levels.

Additional features:

- The chart comes in a set of two panels (WxH 56x65 cm). One panel for measuring distance visual acuity at normal contrast, and one for measuring visual acuity at low contrast (contrast value=0.1). The difference between the two provides the Low Contrast Sensitivity value LCS.
- The optotypes have been calibrated and adjusted to the Landolt rings. They have been designed to be 6% larger than the Landolt rings to be able to measure the same visual acuity.
- The layout with five optotypes per line complies with the international standard for ETDRS format, which stipulates that a row is considered read if 3 of the 5 optotypes are identified correctly.

- On the left-hand side of the panels, the normal distance is indicated in metres. A person with a visual acuity of 1.0 can read the relevant line at this distance. The visual acuity at the test distance is calculated using the equation:

$$\text{Visual acuity} = \frac{\text{Test distance}}{\text{Normal distance}}$$

- The notation on the left-hand side also features an optotype assigned to the relevant normal distance, which represents the first optotype of this visual acuity level and helps eye care professionals find the proper notation for the line read.
- The chart also provides circles in different visual acuity levels on the right-hand side for testing astigmatism with the cross cylinder method.



938147 SZB Bailey-Lovie chart set

938147-1 SZB Bailey-Lovie chart set

each panel divided into upper and lower half

continued on the back

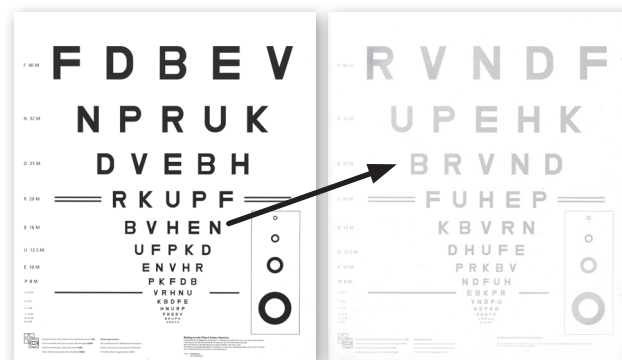
Guide to vision assessment:

The chart can be used at any viewing distance. A test distance of 2 metres is recommended, since the optotypes then represent visual acuity levels between 0.05 and 1.0. The table below indicates the relevant visual acuity level for the different test distances. The notation on the chart always refers to a visual acuity of 1.0 at the indicated distance.

As usual, you are going to measure visual acuity monocularly at a defined distance. Remember to insert a corrective lens into the rear cell of the trial frame to compensate for the shorter test distance. The table below indicates the relevant distance visual acuity. Use the circles for the cross cylinder test.

When changing the test distance, proceed in the logarithmic steps shown in the table. For example, change from a 2-metre test distance to 1.60 metres, then to 1.25 metres and so on.

After determining the refraction, check the contrast sensitivity. Use the same test distance and commence with the line that is two steps larger than the last line recognised on the normal contrast chart (visual acuity is 2 steps lower at low contrast than at normal contrast).



If patients cannot recognise this line, ask them to move to the next larger line or bring the chart closer by one step (e.g. from 2.0 metres to 1.60 metres) until patients can read the optotypes. Record the achieved values as follows:

If the two steps larger optotypes can be read, this corresponds to normal contrast vision = LCS -2.

If three additional steps must be offered (5 steps in total), record LCS -5 (e.g. visual acuity 0.08 LCS -5).

Visual acuity at different test distances

Distance in metres on Bailey-Lovie chart	Distance visual acuity at test distance			
	2 m	1.6 m	1.25 m	1.0 m
40 m	0.05	0.04	0.03	0.03
32 m	0.06	0.05	0.04	0.03
25 m	0.08	0.06	0.05	0.04
20 m	0.10	0.08	0.06	0.05
16 m	0.13	0.10	0.08	0.06
12.5 m	0.16	0.13	0.10	0.08
10 m	0.20	0.16	0.13	0.10
8 m	0.25	0.20	0.16	0.13
6.3 m	0.32	0.25	0.20	0.16
5 m	0.40	0.32	0.25	0.20
4 m	0.50	0.40	0.31	0.25
3.2 m	0.63	0.50	0.39	0.31
2.5 m	0.80	0.64	0.50	0.40
2 m	1.00	0.80	0.63	0.50

Visual acuity scales

Foot	Metre	Decimal	LogMAR
20/400	6/120	0.05	1.30
20/320	6/95	0.06	1.20
20/250	6/75	0.08	1.10
20/200	6/60	0.10	1.00
20/160	6/48	0.13	0.90
20/125	6/38	0.16	0.80
20/100	6/30	0.20	0.70
20/80	6/24	0.25	0.60
20/63	6/19	0.32	0.50
20/50	6/15	0.40	0.40
20/40	6/12	0.50	0.30
20/32	6/9.5	0.63	0.20
20/25	6/7.5	0.80	0.10
20/20	6/6	1.00	0.00