



Understanding Near Visual Acuity

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WHAT IS VISUAL ACUITY:

Visual Acuity (VA) is a measurement of how well the patient is able to see with their central vision only (when spectacles are worn if they are needed). This is also called *Best Corrected Visual Acuity (BCVA)*.

Other measurements of vision can also be clinically useful:

- *Uncorrected Vision (Un)* - with no spectacles or contact lenses
- *Habitual Vision (Hab)* - wearing the patient's current prescription

Visual acuity can be measured for both distance and near vision. The standard assessment is *Distance Visual Acuity*, but the *Near Visual Acuity* becomes especially relevant of vocational and recreational tasks.

MEASUREMENT DISTANCE

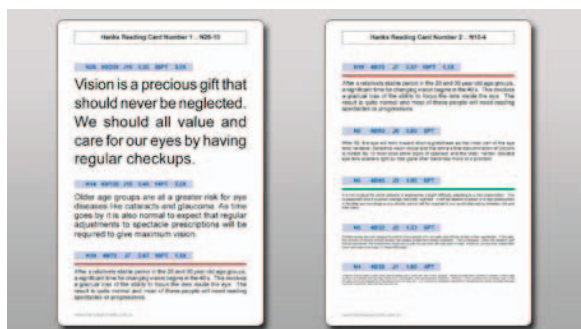
The concept of Visual Acuity is to tell us how well the patient sees at a certain distance when compared to how well somebody with normal sight sees at that same distance.

For *Near VA* the standard measurement is at 40 centimeters or 16 inches. It can also be measured at other distances, like an *Intermediate* distance of 80 centimetres or 32 inches .

IMPORTANCE OF VA:

We need to know VA so that we know whether the best possible vision has changed & whether the patient meets the standards required for various tasks.

It is also important to know the VA in order understand what vision is expected for the particular patient. For example, when delivering new spectacles.



DIFFERENT VA CHARTS:

While a standard letter chart is the most common way of measuring visual acuity, other charts have also been developed.

Vocational charts represent specific tasks that are relevant to the individual patient. For example, these may include telephone book listings or sheet music.



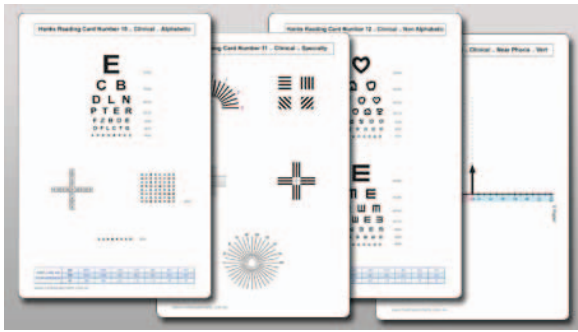
There are also charts for people who can't recognise letters of the alphabet and specialised charts for particular clinical tests, like near phorias and ductions.

THE MEASUREMENT:

Near VA is usually measured with a range of standard text in a range of sizes. These are usually labelled N26 to N4.

Since this is usually the Best Corrected measurement, the near correction (spectacles or contact lenses) should be worn for the measurement. Always document the result as "Unaided" if a correction is prescribed but was not worn for the test.

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MEASURING NEAR VA:

- Place the chart 40 centimetres (16 inches) from the patient's eyes
- Use adequate illumination
- Wearing latest near correction
- It is normal to test both eyes together for Near VA
- However, if a measurement is required for each eye, use an occluder (over the spectacles if worn) to cover the eye not being tested
- Ask the patient to read the smallest text they can
- Encourage the patient to keep going, to relax and to blink regularly
- Do not make comments, or allow companions to make comments or prompts, while the patient is reading the chart
- The red or green colour bars on some charts can be useful when directing a patient to a particular line - "Please start by reading the text below the red line"
- The smallest text read correctly is the one that is documented as the Near VA measurement

THE RECORD OF NEAR VA:

Near Visual Acuity is recorded in several different ways, with Snellen VA recommended . .

- SNELLEN VA: As a ratio, like the 6/6 or 20/20 used for Distance VA. eg: 40/50
 - The first number is the distance at which the test was done (40 centimetres)
 - The second number is the size of the letters that the patient could read (what normal sight would have seen at 50 centimetres).
 - This ratio or fraction is called *Snellen notation*.
 - A plus (+) or minus (-) means slightly better or worse than the line indicated. eg: 40/50+
- N SIZE: These are directly related to the point size of the text. eg: N8 is the same as 8pt
- JAEGER NOTATION: This is an historical system from the 19th Century. The Jaeger numbers are only for reference and they are not numerical (for example, 2 is not twice as big as 1).

NOTE: While Jaeger scores are still sometimes used to rate near visual acuity, these values are

not standardized for size or test distance. They are not recommended as confusion can result from their use.

- DECIMAL VA: This measurement is the same as the Snellen VA, but the ratio is expressed as a decimal. A drawback is that the decimal does not indicate the testing distance. eg 40/50 is the same as 0.80
- POINT SIZE: These are well known measurements for printed text, however there is some variation when different fonts are used. eg 8pt

INTERPRETATION OF VA:

40/40 means the patient could read at 40 centimetres what a normal person could read at 40 centimetres. So they have normal vision.

In this *Reading Card Collection*, normal vision at 40 cm is the text below the green highlight line. This has the notation N6, 40/40, J3, 1.00 or 6Pt.

EXAMPLES:

Do not try to remember these examples. It is better to understand what they mean so you can work out any possible result at the time:

- 40/60 means they could read at 40 centimetres what a normal person could read at 60 centimetres. So it had to be $1\frac{1}{2}$ times bigger than normal.
- 40/80 means they could read at 40 centimetres what a normal person could read at 80 centimetres. So it had to be 2 times bigger than normal.
- 40/200 means they could read at 40 centimetres what a normal person could read at 200 centimetres (2M). So it had to be 5 times bigger than normal. (Not very good, so don't expect too much from the spectacles).

INTERMEDIATE TASKS

Occupational tasks often need to be assessed at a distance that is specific to that task. For example, sheet music and playing cards are usually viewed at a longer distance.

For assessing visual performance with these different tasks, the chart should be held at the habitual distance for the particular task. For example, music would typically be viewed from a distance of 60 centimetres (depending on the instrument). Or a computer screen is typically 50 centimetres from the eyes of a subject. These are always measured to get an accurate distance.

CANNOT MEASURE VA?

If the patient cannot see the largest text on the chart, move the chart closer and try again. If they can now read the text be sure to record the distance where this result was achieved.